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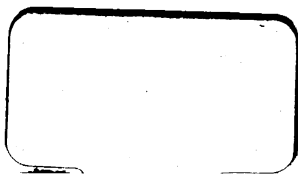
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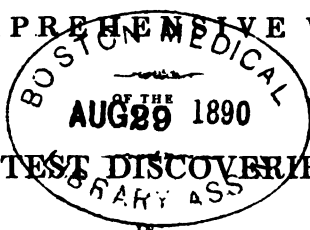
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MEDICINE, SURGERY, AND THE COLLATERAL  
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In Dr. O'Beirne's paper, the diuretic mixture, prescribed at page 251, should have contained one drachm of the nitrate of potassa; and it should have been stated in the 1st, 2nd, 4th and 5th of the cases, that the scrotum and penis were swollen and œdematous.

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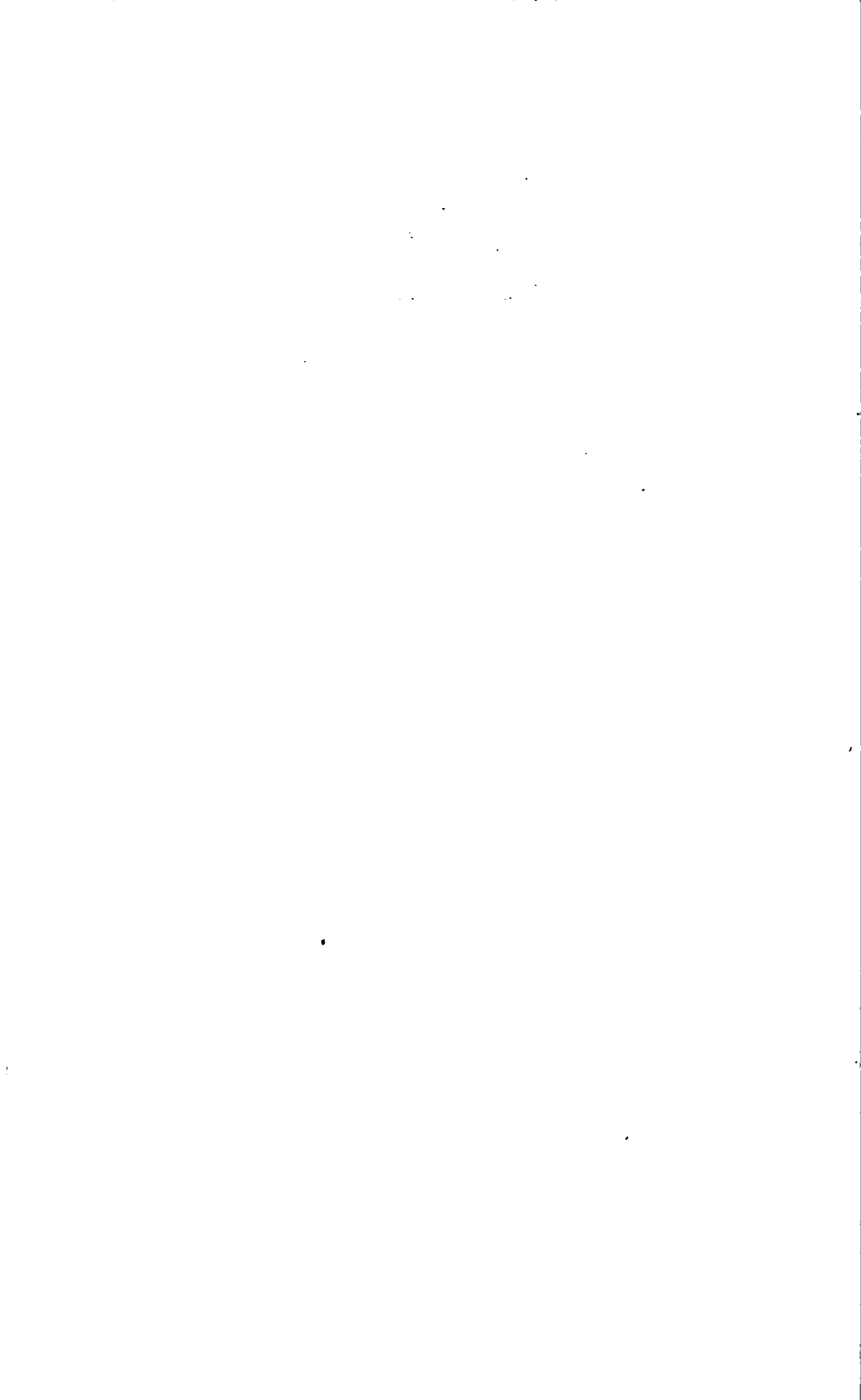
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# DUBLIN JOURNAL

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PART I.

ORIGINAL COMMUNICATIONS.

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ART. I.—*An Account of a remarkable Case of Cutaneous Hæmorrhage, accompanied with Spots of Urticaria (Purpura Urticans, Willan). With Remarks.* By R. B. TODD, M. D., F. R. S., Fellow of the College of Physicians, Physician to the King's College Hospital, and Professor of Physiology in King's College, London.

THE accurate and observing Willan has described four forms of purpura. The *Purpura Hæmorrhagica* is a disease nearly allied to scurvy; it is one, indeed, which must be placed in the same category with that disease, although the different effects of remedies, and some difference as regards etiology, would seem to denote that their pathology was not the same. This form of purpura is well known, and of common occurrence, and is essentially a hæmorrhage from the capillary system of the tegumentary tissues, the skin, and mucous membrane, which throughout their whole course, excepting in the lungs, show abundant evidence of the hæmorrhagic diathesis. Other parts are also sometimes affected; the subserous tissue (I have seen the heart

studded over with hæmorrhagic spots) ; the muscles; the subperiosteal tissue, and some of the glandular organs ; but hæmorrhage into these parts is of much more frequent occurrence in scurvy, than in purpura. It is very remarkable, to what an extent the lungs enjoy immunity from hæmorrhage, in both these forms of disease.

The so-called varieties of purpura, which Willan designates, and Bateman retains, by the names of *simplex* and *contagiosa*, are obviously very different as regards their pathology ; and, I apprehend, few will contend for classifying them with the disease just described.

A fourth variety, *purpura urticans*, presents some remarkable phenomena, which seem to entitle it to be regarded, not less as a species of urticaria, than as one of purpura. This is certainly a rare disease. Willan quotes Hoffman and Rumler as having described it : his own description is that, apparently, of one who had seen, but who was not familiar with, the disease ; and his successors in the study of cutaneous affections, do not appear to have acquired any more intimate knowledge of it, for they all adopt his description almost *verbatim*. Willan has also given a delineation of this variety of purpura.

My attention was directed to this form of purpura, by what appears to me to have been a remarkable example of it, which came under my care at the King's College Hospital last year ; and, as I find the records of medical experience very deficient in the narratives of similar cases, I am induced to publish the history of this case, from the notes which have been preserved in my hospital case book.

I shall premise my account of the case, by quoting Willan's description of the disease.

“PURPURA URTICANS.—This form of the purpura begins with hard, reddish, and rounded elevations of the cuticle, of the size and appearance represented, Pl. xxx. fig. 1. These small tumours gradually dilate, but within twenty-four hours they subside to the level of the surrounding cuticle. They are then succeeded by livid spots of the same extent. During the night the

spots are somewhat elevated, and exhibit a little redness, intermixed with the livid colour; towards morning they constantly resume their former state, being dark-coloured, and without elevation. The patches are not permanent, but succeed each other in different places, chiefly on the legs, but sometimes on the thighs, arms and breasts, &c. On the legs and arms they are frequently intermixed with petechiæ. The duration of this complaint is from three to five weeks, in the course of which time, the hands and ankles are affected with œdematous swellings. The most distressing symptoms are a sensation of great languor and debility, and a loss of appetite. I have not, in any case, observed hæmorrhage or fever.

“The purpura urticans generally appears in summer and autumn, affecting, 1st, those who are exposed to daily fatigue from hard labour, and who subsist on a meagre diet; 2nd, delicate young women, who live luxuriously, but use very little exercise. In the latter, before any livid spots appear, and before the anasarca is perceptible, the legs are sometimes hard and enlarged, so that their stiffness or weight impedes the freedom of motion, and very soon occasions fatigue.”\*

CASE.—William Pocock, æt. 39, a policeman; a strong, muscular man; not fat; always of temperate habits. He was admitted into the King's College Hospital, on the 22nd of October, 1841.

During the past summer he has had occasional attacks of diarrhœa, with severe griping pains in the bowels, lasting for one or two days, and then leaving him quite well. The attacks were not attended with vomiting. They were never so severe as to prevent his attending to his duty. His last attack was about a fortnight ago, when he was severely purged, his evacuations being watery, but of a natural colour; he had no vomiting; the attack lasted two days.

On the 15th, while walking along the street, he perceived a

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\* Willan on Cutaneous Diseases, p. 461. London, 1808.

stiffness in the calves of his legs, which continued for that and the subsequent day. On the 17th, in the forenoon, his right knee became stiff, and he observed a number of red spots on the skin of the leg and thigh; in the afternoon the knee became very much swollen and painful, and he was unable to bend it, or bear his weight upon it. During the night the pain and swelling extended to the leg. Next day, 18th, the left ankle became very much swollen and painful. The pain and swelling in the right leg and thigh increased considerably during the day, and he describes the spots as having become larger and darker in colour. Similar spots appeared on the left thigh, but not in so great numbers. This day he was seen by a medical man, who bled him to a small amount, and gave him some purgative pills containing mercury.

On the 19th pain and swelling attacked the elbows, and a number of spots, each as large as a sixpence, appeared on the hands. On the 20th his throat became sore, and he swallowed with difficulty; the difficulty of deglutition increased during the night, and his medical man applied a blister to the throat the next morning. The night before his admission his eyelids began to swell, and in a short time the swelling extended to the whole face.

He entered the hospital on the morning of the 22nd. On the first glance I had of him, when I came into the ward at the usual hour of visit, I fancied he was labouring under acute dropsy. I found an universal œdema of the face, scalp, trunk, and extremities. I immediately asked to see his urine; it was scanty, very high-coloured, depositing the lithate of ammonia in great abundance; of high specific gravity, and devoid of albumen. The notion of acute dropsy, at least in its ordinary form, was therefore abandoned.

I now perceived a strong mercurial fœtor from his breath; and on careful examination of the gums and lips, I felt certain that much of the swelling of the latter was attributable to the small quantity of mercury he had taken. The gums were ul-

cerated, as also the inner surface of the lips, which likewise received the impression of the teeth. This rapid yielding of the system to the mercurial influence, seemed to favour the diagnostic of acute dropsy, to which, however, the state of the urine was adverse; for it has been often observed, that persons labouring under the acute form of that condition of kidney, which gives rise to albuminous urine, are liable to profuse salivation from even a very small quantity of mercury.

But the most remarkable phenomenon, presented by this patient, was the occurrence of an immense number of reddish or livid spots on the skin. These were found upon the forehead, the scalp, the chin, the upper and lower extremities. These spots were raised above the surrounding skin, like the wheals of urticaria; they were circular, very variable in size, some very small, others as large as a shilling, most of them distinct, but some confluent. The greater number of these spots was red or livid, from hæmorrhage having evidently taken place into the chorion; those which had only just appeared were whitish, but they soon became red, and the seat of a sanguineous effusion. The largest spots were on the scalp.

The eyelids were remarkably swollen likewise; those of the right side so much so, that the patient was quite unable to open his eye, the lids were livid also from effused blood, which gave him quite the appearance of having got a "black eye" from a blow. The right eyelids were much more swollen and livid than the left, which seemed accounted for by his having lain chiefly on his right side, gravitation favouring the effusion of blood.

Beneath the integument of his throat, where the blister had been applied, a large quantity of blood was effused, so that that surface presented a uniform dark red colour, and at a distance looked gangrenous. At the prominence of each shoulder there was also a considerable patch of effused blood, that of the right side being much the larger; and it was remarkable that the margins of these red patches were raised above the surrounding skin, like the edges of the smaller spots.

The remarkable disposition to cutaneous hæmorrhage here manifested, suggested the inquiry as to hæmorrhage from other parts, and as to the hæmorrhagic diathesis. On examining his gums, I found them soft and spongy, but not more so than might be accounted for by the mercurial ulceration, under which the patient had laboured. He had deep sloughing ulcers affecting the region of the tonsils, and the arch of the palate; and by the side of the uvula there were two very small patches of extravasated blood, but there was no other sign of hæmorrhage within the mouth.

He had not had epistaxis, nor hæmoptysis, nor any evidence of bleeding from the gastro-intestinal mucous membrane. In short his previous history gave no proof of a hæmorrhagic diathesis.

It was plain, then, that there was considerable cutaneous irritation, from the multitude of nettle-rash spots, with which the patient was covered, and that, attendant upon it there was a very extensive hæmorrhage into the skin. Could any cause be adduced for this remarkable state? The man lived well, ate meat, and drank beer daily, and the only cause he could assign was, that he had lately been employed on a very harassing and fatiguing duty.

The functions appeared all tolerably natural; the abdomen was soft and free from pain; pulse 90, compressible; respiration natural; skin cool; feet cold; no delirium. Has latterly had but little sleep, owing in great part to the irritation of his mouth and throat, and the profuse flow of saliva incessantly pouring from the mouth; bowels confined.

The patient appearing much exhausted he was ordered:

Vin. ʒ iv. Beef tea.

℞ Liq. Opii Sedativ. ʒ xl.

Spt. Æth. Nitrici, ʒ i.

M. Camph. ʒ x.

Ft. Haust. statim sumend.; and a chloride of soda gargle for his throat.

23rd. Has slept several times during the night; soreness of throat much relieved; swelling of the lips reduced, but the

gums are soft and spongy, and the salivation is profuse. The swelling of the eyelids is less, so that he can open them slightly. The conjunctiva is ecchymosed in the right eye. Several small spots of extravasation exist beneath the mucous membrane on the posterior surface of the lips. Tongue moist and much furred.

Several additional spots, very similar to those of nettle-rash, but having a livid colour from extravasated blood, have appeared on the back of the scalp, also on the arm. The œdema of the right arm is much increased, some of the spots, noticed in the last report, on the extremities, are less raised, and seem subsiding.

The blistered surface on the throat still looks black, and the extravasation of blood has extended some way down the sternum and over the left shoulder.

Bowels confined; urine scanty, high-coloured, depositing a thick yellowish sediment, which disappears under the influence of heat, and on the addition of liquor potassæ; pulse 90; skin cool; no thirst.

℞ Quinæ Disulph. gr. i.

Acid. Sulph. dilut. ℥x.

Infusi Quassiæ ʒi. ter die.

Beef tea, half a pint of porter; owing to the state of his gums, and the difficulty of swallowing, he is unable to take solid food.

24th. There is a little improvement in his appearance to-day; the œdema and lividity of his eyelids being less, and his lips less swollen. His deglutition is easier; salivation still continues.

Fresh spots have appeared on his neck and left shoulder, and over the region of the scapula, where they are of considerable size; some of these spots are as large as a sixpence, others not larger than a pin's head. They are all raised, like the wheals of nettle-rash, colourless at first, but afterwards becoming livid in the centre, whence the lividity extends to the whole surface of the wheal. The wheals which came out yesterday

have subsided, are losing the livid colour, and acquiring that greenish yellow hue, which always succeeds to the extravasation of blood. On the nates there are several large wheals of an oval shape, also livid in the centre, much larger than any observed elsewhere, their great size being probably the result of the confluence of several smaller ones.

Tongue moist and furred; no thirst; p. 72, full and compressible; anorexia; bowels open, evacuations free from blood; urine more abundant, depositing the red lateritious sediment. His legs are stiff; the swellings of the joints much less; complains of a general feeling of soreness, as if he had been severely beaten.

To continue the quinine; to have three eggs daily.

25th. Passed a quiet night; face less swollen; the spots perceived yesterday have subsided, and the discoloration on the shoulder and chest is assuming the greenish yellow hue. Some fresh wheals have come out on the arms and chest.

The œdema and discoloration of the legs are gone, but he complains of pain and tenderness in the calf of the right leg, and some hardness is felt there. He suffers very much from the swelling of his lips and the sloughing of his throat, which evidently are the results of the excessive salivation.

He continued pretty much in the same state for the next four or five days; the patches of discoloration gradually fading; a few new spots appearing, and again subsiding, without any alteration in his constitutional symptoms.

On the 31st the following report was made:

Face appears natural; some fresh spots have come out on the forearms. The cellular tissue of the scrotum is very œdematous, and of a livid colour. His breath has much less of the mercurial fœtor, gums less spongy, and the appearance of the fauces is improving.

Nov. 1st. The spots which appeared yesterday, did not exhibit the same amount of lividity as before, and to-day they have

entirely disappeared. One or two new spots of a semilunar form have appeared in the arm.

4th. Several new spots of considerable size have appeared on the right thigh. These spots are in the form of oval rings, measuring one inch five-eighths in the long, and one inch in the short diameter. They are *red* on the surface, and hæmorrhage has evidently not occurred in them ; two or three small spots on the arm are hæmorrhagic. His throat and other symptoms are much improved.

Up to the 13th, spots of urticaria, without hæmorrhage, continued to come out on the thigh and arms, they used to appear in the evening and disappear before morning ; the throat and gums gradually but slowly improved. He persisted in the same plan of treatment, namely, nutritious diet, saline purgatives occasionally, and sulphate of quinine in small doses, with a small quantity of wine.

On the 14th he was able to sit up, without fatigue ; his appetite had considerably improved ; throat nearly healed, with considerable loss of substance in the region of the right tonsil, and of the right half of the uvula. No new spots.

On the 20th all medicines were omitted, and he was allowed full diet, and porter. He left the hospital early in December.

Whoever compares the detail of this case, with the description given by Willan, of *purpura urticans*, cannot fail to perceive that the symptoms of the patient were just those of an aggravated example of that disease, and it is not improbable, that its aggravation was due to the early venesection and mercurialization, to which recourse was had, before his admission into the hospital.

It seems to me, however, that a leading feature of the disease was the occurrence of an eruption, presenting the characters of that of nettle-rash, fleeting and changeable like it, attacking different parts of the body, without any regular order or succession, but with, as so often occurs in cutaneous affections, a certain disposition to a symmetrical arrangement. To this was super-added a disposition to hæmorrhage, limited strictly to the skin,

with the exception of some spots which formed on the inside of the lower lip, and on the side of the uvula. The hæmorrhage in the spots appeared to ensue upon, and probably to be occasioned by, the same physical cause which gave rise to the nettle-rash.

In a paroxysm of nettle-rash, there is, doubtless, a considerable hyperæmia of the skin; if this occur in a constitution enfeebled by considerable exertion, as was the case in my patient, and in which, consequently, the nutritive processes must be impaired, it is very likely that a rupture of some of the minute capillaries would take place, and thus hæmorrhage occur into the swollen parts of the skin. If this be the correct rationale of the mode of production of the cutaneous eruption, it would seem more correct to consider this disease as a variety of *Urticaria*, and to designate it "*Urticaria Hæmorrhagica*."

That this explanation is the most probable one, I think, is abundantly evident from the following considerations:

1st. The spots of urticaria always preceded the hæmorrhage, which appeared in the centre of each wheal as soon as it reached its acme, and gradually extended throughout it.

2nd. The hæmorrhagic disposition in the skin was manifested, only when some irritation was excited in it, either that of the urticaria, or some local irritant, as a blister, for the surface to which the blister was applied exhibited a uniform black colour, owing to the extravasation into the areolar texture of the chorion.

3rd. The absence of hæmorrhages from other surfaces and organs than the skin (although it did not perhaps prove that there was no hæmorrhagic diathesis, yet) showed, that some change in the quantity of the blood in the vessels, or in the state of tone of their walls, was necessary, to give rise to the hæmorrhage in the skin. Doubtless had the capillary system of the internal integument been similarly irritated, we should have found hæmorrhages taking place from the mucous membrane.

The vague manner, in which the term *purpura* is employed,

in reference to what I have shown to be evidently different forms of disease, is an example of the evil which results from the application of names, in the infancy of science. I should propose to limit the term *purpura* to the hæmorrhagic variety of Willan and Bateman, and I think it ought to be completely excluded from the category of cutaneous diseases, among which it has no more right to be enumerated, than typhous fever, or any other constitutional malady.

Since I began to write this paper, I have perceived that Dr. Graves described two cases of *purpura hæmorrhagica*, in which there was added to the internal hæmorrhages, which usually occur in that disease, "a peculiar exanthematous eruption." It is not stated whether there was any hæmorrhage into the skin, nor has the eruption been minutely described ; but the mode in which the eruption appeared leads me to suspect that it may have been of the nettle-rash kind. Dr. Graves's cases, however, were examples of true *purpura*, the peculiar cutaneous eruption seemed to be an accidental addition to the symptoms of that disease.\*

I shall conclude this paper with some remarks upon the mechanism, so to speak, of hæmorrhages.

An opinion prevails, sanctioned by eminent authority, that hæmorrhage may occur in two ways: first, by a sweating of the blood through the coats of the vessels without rupture ; and secondly, by rupture of vessels. It is affirmed that hæmorrhage may take place in the former way, because in certain cases no breach of continuity, no ruptured vessel, can be found, even upon the most careful examination, on the surface from which the blood escapes. In other cases, again, the ruptured vessel can be distinctly seen, and the source of the hæmorrhage, and the mode in which the blood escapes, are equally obvious.

The first doctrine appears to me to be utterly inconsistent with sound views of the anatomy of the capillaries, and the composition of the blood. In order that red blood shall transude through the walls of its containing capillaries, it is necessary that

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\* Dublin Journal of Medical Science, vol. xviii.

all its constituents, its liquor sanguinis, and red particles, should find a ready passage through them.

The red particles measure from  $\frac{1}{4500}$  to  $\frac{1}{2000}$  of an inch, they are compressible and elastic, and by pressure may be made to occupy a much smaller space. Let us suppose they can be compressed into one-half the smallest dimensions above mentioned. It will, then, be necessary that the pores in the parietes of the capillaries shall be, at least, large enough to transmit particles, measuring  $\frac{1}{9000}$  of an inch. Such pores would be visible under the microscope, and a membrane containing them in great numbers, as, we must suppose, would be the case, with the capillary walls, would appear cribriform under a high magnifying power. To suppose pores of this kind to exist, is quite inconsistent with what we know of the anatomy of capillary vessels; but without them, it would be impossible for the corpuscles to escape, whole and unchanged, through the coats of the vessels. For this reason I am led to deny the possibility of an escape of blood, *in an unaltered state*, through the walls of the capillaries, and to affirm that all the ordinary hæmorrhages take place by *rupture of blood-vessels*.

Bleeding from the nose, which is the most frequent form of hæmorrhage, it is well known may be readily excited by the removal of even a small portion of hardened mucus from the nasal membrane: it cannot be doubted that, under these circumstances, small vessels are ruptured.

A very slight injury to the surface of the skin will remove a portion of cuticle, and occasion bleeding, evidently from the rupture of vessels; for if cuticle be raised carefully, and without violence, no hæmorrhage will occur, even although hyperæmia of the vessels may exist, as is daily seen after a blister.

It is not improbable that the hæmorrhage, however trifling in amount, which is so frequent, and often so certain a harbinger of phthisis, may be the result of the rupture of vessels consequent upon the detachment of a portion of hardened or vitiated mucus, which had adhered to the surface of some air cell or small bronchia.

Again, in cerebral apoplexy, the source of the blood is most probably from ruptured vessels ; for in how many of these cases do we not find the blood-vessels more or less diseased ? I believe I should not be going too far in stating, that in *every case* of apoplexy the blood-vessels are in a morbid state.

It is true that another explanation has been offered of the hæmorrhage that occurs in scurvy and in purpura. It has been affirmed that, in these diseases, the colouring matter is dissolved in the liquor sanguinis, which transudes. But this opinion does not appear to be founded upon careful observation of the actual state of the blood corpuscles. I have to regret an imperfection in the account of the case which forms the subject of this paper, namely, that I neglected to examine his blood by the microscope. The fact was, that when the patient first came under my care, he was in so depressed a condition, that I felt an insurmountable repugnance to depriving him, even of so small a quantity of his vital fluid, as was necessary for the examination.

From one opportunity I have had, of making a careful examination of the blood in purpura hæmorrhagica, I can affirm, that, in that case, the colouring matter certainly was not in a state of solution. But the blood corpuscles were not healthy ; and that examination led me to suspect, that in purpura and analogous diseases, the genesis of the blood corpuscles is materially interrupted, and that the main alteration of the blood, *that is visible*, consists in the consequent imperfection of these particles. What its chemical changes are I am unable to state.

I shall here transcribe the notes I made at the time I examined the blood of the patient labouring under purpura.

March 31st, 1840, 10 o'clock, P. M. Examined some blood from a boy affected with purpura. It was taken from a vein about 2 o'clock in the day, and received into a small bottle containing some weak sugar water. The corpuscles were distinct and large, most of them measuring from  $\frac{1}{3000}$  to  $\frac{1}{3000}$  of an inch ; *but a vast number of much smaller, roundish, or irregular bodies existed ;* some of these seemed like shrivelled

blood corpuscles; but the great majority resembled *little aggregations of granules adherent to each other*, with small particles of colouring matter intermixed, forming bodies ranging between  $\frac{1}{4000}$  and  $\frac{1}{3000}$  of an inch in diameter. These bodies were very much *more numerous* than the blood corpuscles, which I felt satisfied, on careful examination, were perfectly healthy.

On the 2nd of April I made another examination of this boy's blood, obtained in a similar way, with the same result, excepting that the small irregular granular bodies did not appear to be quite so numerous.

April 20th. The boy has completely recovered, and lost all spots of purpura. I this day examined some of his blood, and find great numbers of very natural and perfect blood corpuscles, some with the wrinkled appearance towards their margins, and *a very few of the granular bodies* above described.

Recent microscopic research has rendered it most probable that the blood corpuscle is a nucleated cell; and that its generation takes place in a precisely similar way to that of the primary cells of the tissues, whether its source be derived from already existing corpuscles, or elsewhere. Seeing, then, the great number of granular bodies, in my first examination of the purpura blood, which, subsequently, gradually diminished as the disease subsided, I thought it not unlikely that these bodies might be blood corpuscles, in an imperfect state of development; and that the imperfection of the formative process was due to some alteration in the chemical and vital properties of the blood. The slight differences which modern animal chemistry has shown to exist, between the proximate animal elements, seem to justify the opinion, that even a slight change in the properties of one or more of these elements in the blood, might retard, or materially modify the development of the red particles. It would be highly interesting, if it can be shown by subsequent observations, that a main defect in the blood in purpura and scurvy is, as I venture to suggest, *an arrest in the genesis of the blood corpuscles*.

ART. II.—*Extraordinary Case of Twins, in which one (a dead) Child, was retained in the Womb for forty-nine Weeks, the other having been born alive at the Expiration of nine Months.* By WILLIAM JAMESON, M. D., Assistant Surgeon to Mercer's Hospital, Consulting Surgeon to the Coombe Lying-in Hospital, and Senior Physician to St. Peter's Parochial Dispensary.

ON the evening of the 3rd April last, I was called to Fitzwilliam-place, to see Mrs. R. a lady about 30 years of age, the mother of four living children, in consequence of severe pain experienced through the abdomen which recurred at uncertain intervals, lasting generally about five minutes at a time.

These pains commenced in the morning after breakfast, but in consequence of their becoming more severe, and dreading inflammation, she sent for me.

When I arrived she was in bed, her pulse a little accelerated, tongue clean, no tenderness discoverable on pressure in any part of the abdomen, which felt full, but being seized during the examination with a pain, I then distinctly discovered a firm, hard tumour, that reached as high as the umbilicus, but became softer on the subsidence of the pain, and which appeared to me to be a gravid uterus. On applying the stethoscope over the tumour, after some difficulty I thought I heard a placental murmur in the right iliac fossæ, but no foetal heart any where, and suggested the possibility of her being with child, and then in labour. This, however, she considered to be impossible, as she had been confined so recently (seven weeks) of a child she was then nursing. A vaginal examination was refused; I found, however, on inquiry, that she had had a slight red discharge from the vagina during the latter part of the day, which she considered menstrual.

As I was convinced that the tumour was the uterus, and that it was acting to get rid of something or other, I ordered an oil draught, and quitted the apartment in order to explain to her husband my views of the case, viz. that there was some foreign

body in the womb, which in all probability would soon be expelled.

While we were thus conversing on the subject, I was hurriedly summoned to my patient, who told me that there was something coming from her. On making the examination during the pain I found the head of a small child presenting with the membranes complete, and on the recurrence of another pain, the child, membranes, and placenta, were expelled altogether. I immediately opened the bag containing very little liquor amnii, and found in it a dead male child, at about the sixth month of gestation : shrivelled and dark, but not at all putrid or decomposed, between eight and nine inches long. The cord was small, easily giving way under the fingers : but the placenta appeared to be fully as large as one belonging to a full grown fœtus, and healthy. Indeed I have often met a smaller one at the full period. The uterus now contracted well. I placed a binder round the abdomen, administered an opiate, and never saw a more astonished female.

The account I received was as follows. It appeared that she had had four previous confinements without any untoward circumstances, each labour being generally complete in a few hours. That the youngest of them was a boy then only seven weeks old, having been born on the 13th February last, which she was nursing. That she had been attended by a midwife at her residence in the county of Wicklow (her usual medical attendant being out of the way when sent for) ; that on that occasion her labour went on much the same as usual, having been completed in four hours ; that the after-birth was thrown off about ten minutes after the birth of the child, without any subsequent hæmorrhage ; and that she recovered and was able to go about her domestic arrangements as soon as on former occasions ; but she remarked that her size had not much decreased, which she imputed to bad swathing of the abdomen. That her general health was good ; had as much milk as usual, and the only thing that annoyed her was her size, which she considered a natural consequence to her situation, as she always got fat while nursing.

That the last time she menstruated, was in the latter end of the month of April, 1841, and as she had been confined on the 13th of February last, forty-two weeks must consequently have elapsed between the last period of menstruation and the birth of the child.

The above case I consider one of great interest, whether viewed, in the first place, as regards the size of the child, it being as large as a child at the sixth month; the circumstance of its having been carried forty-nine weeks (within three weeks of twelve months) after the last act of menstruation, and remaining for such a length of time after its growth was arrested in utero without becoming decomposed; the labour pains ceasing after the birth of the first, and no inconvenience arising from, or suspicion of anything remaining in the uterus after that accouchment. All these are points, I say, of great interest. Secondly, to view it as a case of superfetation, or as one of common twins, in which the first was expelled under ordinary circumstances at the full period; then all labour pains having ceased, and an ignorant woman being in attendance, who did not know whether a second child remained behind or not, from the feel of the abdomen, while a second did not only exist, but was carried for seven weeks afterwards without any suspicion of its existence.

I am fully aware that many practitioners have met cases (a similar one of which occurred with myself) of abortion having taken place in twins, where one ovum was expelled, and that notwithstanding, the female has gone on progressively increasing in size, and in a few months, as the case might be, brought forth a living child at the full period. Other instances again, of twin cases, in which one child has gone on to the full period, and been born healthy, and full grown, while its companion in utero has been blighted at a very early period (a beautiful preparation illustrative of which we have preserved in the Coombe Hospital Museum), and been expelled at the same labour, giving rise to the idea of superfetation, or of a woman having conceived

again while she was pregnant, from the circumstance of the child not being putrid, some erroneously imagining that a dead child cannot be carried for any great length of time without being found in that state.

But I am not aware of any instance in which a woman was pregnant of twins (evidently the case here), where, at the full period, labour set in, and went on healthily, expelling one child alive, while another, dead, was retained and held in the womb for seven weeks afterwards.

The retention of the placenta is also a matter deserving of attention ; why was there not hæmorrhage after the birth of the living child, inasmuch as the presence of the unexpelled contents prevented uterine contraction to have gone on sufficiently for that purpose. The only answer I should give to this is, that the ovum remaining in the womb, and of a sufficient size, must have pressed against the surface to which the other placenta was attached, and in that way have saved the patient.

ART. III.—*Observations on Hypertrophy of the Brain in Children.* By CATHCART LEES, M. B., Physician to the South Dublin Union, and to the Institution for the Diseases of Children.

ALTHOUGH the much greater development of the brain in some cases than in others, as well as its apparent disproportion to its osseous envelope, has been occasionally noticed by pathologists, as Morgagni, who observes, “that in some bodies which he had examined, the brain appeared large for the cranium which enclosed it, and on this account seemed to be compressed ;” yet, it is only within the last few years that the attention of the Profession has been directed to this subject, or any inquiry made, as to whether this condition might not be ranked as a peculiar abnormal state, manifested by certain lesions of functions, and presenting a group of special symptoms. The facts hitherto adduced have been such as, I consider, would tend rather to excite

inquiry, than satisfy conviction, as to its existence, particularly when we find such pathologists as Rostan (to whom science is so much indebted for his researches on the Pathology of the Brain) classing it as a doubtful state; for, without denying its possibility, he evidently considers that it is rather a consecutive state, depending on encephalitis. Bouillaud entertained the same opinion, as we may infer from the subjoined passage of Andral: "*Est-ce là un premier degré d'encephalite, ainsi que le pense M. Bouillaud, qui a publié sur ce sujet d'interessantes observations. Mais pourquoi, dans cette hypothese, la substance nerveuse augmentée de consistance, est-elle en même temps décolorée, une inflammation, ne devrait-elle pas produire l'effet contraire.*"\*

Dance and Andral, who have given the best description of hypertrophy of the brain, assign to it peculiar anatomical characters,† and dwell particularly on the necessity of distinguishing this state from that of hyperæmia, as it is found to be most frequently in a contrary state, as evinced by its paleness. Their observations, however, refer almost exclusively to adult life, and Dance even appears to consider the age of puberty as a predisposing cause to this state.

In the same chapter, Andral mentions that Laennec had observed this state of the brain as occurring in cases which presented the symptoms of hydrocephalus, and in whom there was but very little effusion; but there was a compressed state of the brain, which he regarded as depending on too active a nutrition. There are not, however, any points of diagnosis laid down to serve to discriminate this state from chronic hydrocephalus, the disease with which it is most likely to be confounded, and which entitles it to the serious consideration of all those who are occupied with the study of infantile diseases, and which induces me to bring forward some cases which have occurred among the children of the institution to which I am attached,

\* Clinique Medical, vol. v.

† Précis d'Anatomic, vol. ii. p. 775.

and which I trust may assist in establishing certain data to found future observations on, as with the exception of Dr. Munchmeyer,\* of Lunebourg, this peculiar state (as occurring in children) does not appear to have met with the attention which it merits.† In some cases reported by Dr. Sims in the Transactions of the Medico-chirurgical Society, the histories are so imperfectly given that it is impossible to ascertain whether the hypertrophy was the original disease, or merely a consequence of the inflammatory conditions with which, after death, it was found to be coincident. Thus in his first case, that of a girl, æt. 16, he states that she was subject to some kind of fits to the age of seven years; that she had no paralysis, but a weakness of her limbs, and she died of enteritis, having presented no cerebral symptoms during her last illness.

In another case, that of a child eleven months old, no previous history is given till three days before death, when the child was attacked with the symptoms of acute hydrocephalus, and died, when he states that from the soft state of the brain it is probable that an inflammatory process had been going on during the latter period of the child's life. There is no accurate history given of any of the other cases, or any data laid down on which to found any principle of diagnosis. The cases which have occurred in my own practice are three, and although they differ in some points, yet as they all tend to illustrate the important features of this peculiar state, with regard to diagnosis, I shall give each of them in detail:

CASE I.—John Harding, æt. two years, a full, heavy-looking child, was admitted into the Hospital in May, 1842, for pertussis; his mother states that he has always been healthy,

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\* Schmidt's Jahrbucher, vol. xxv. 1840.

† Cruveilhier in his Article on Hypertrophy, in the Dictionnaire de Medicine, states, that M. Jadelot had observed, that in many infants who died with the symptoms of Hydrocephalus, he had found great disproportion between the brain and the cranium. He merely mentions that the symptoms are those of compression, without making any attempt at diagnosis.

but very *heavy* and *drowsy*, not playful like her other children, his appetite has always been *great*. The head is rather larger than it ought to be in proportion to his age, particularly across the parietal protuberances, which form considerable projections, the frontal bone also projects over the root of the nose; fontanelles perfectly ossified; his eyes are large, prominent, and widely set; the intelligence is perfect, but he appears to be very *apathetic*, and does not mind any object attentively but his food, for which he is very greedy; he is easily made to cry; there was no fever on him, but the paroxysms of the cough were very violent, and frequently succeeded by convulsions, which were general, and in one of which he died on the sixth day of his disease.

On removing the calvarium the dura mater appeared to be tense, and on dividing it, the cerebrum appeared swollen, and protruded through the membranes; the convolutions appeared to be flattened as if compressed; the vessels of the pia mater were injected with very red blood; the substance of the brain was much congested, but of a firm consistence and very large; there was no serous effusion into the ventricles; there was slight vascularity of bronchial mucous membrane; the bronchial glands were not enlarged; the larynx was perfectly healthy; there were a few very dark, firm spots, like the clots in pulmonary apoplexy, scattered through the lungs, and quite isolated; all the nerves\* were carefully dissected, and presented nothing abnormal.

CASE II.—Ann Murphy, æt. 3, a very delicate-looking child, with the head large in proportion to the body, which is emaciated, particularly the lower extremities; the abdomen is tu-

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\* Mr. Johnston, Demonstrator of Anatomy, whose merit as a practical anatomist is well known, made the dissection in this case, and also in another child, who died about the same time with pertussis, and demonstrated satisfactorily, to Mr. Shannon and Mr. Hamilton, who were with me, the apparently perfectly healthy state of all the nerves (connected with the respiratory organs), from their origin to their extreme ramifications, as also the healthy state of the glands.

mid ; there is considerable projection of the frontal bone, as also of the posterior angles of both parietal bones ; the eyes are heavy, and widely set, so as to give the child the face of one with chronic hydrocephalus ; the fontanelles are quite closed and firm, but cartilaginous ; she is very cross and greedy, crying whenever she sees food, till she gets it, when she falls asleep over it ; in fact she spends her time in crying, eating, and sleeping. Her intellect is obtuse, but appears to be perfect ; the pulse was generally regular, and her pupils natural. She had been left at the gate of the Hospital, so we did not know her previous history, but she remained some months under my observation previous to her death, which took place gradually from chronic diarrhoea, without convulsions.

The brain weighed 2lb. 3oz. ; the dura mater was firmly adherent to the cranium ; the brain was large, the dura mater being rather tense over it ; the substance of the brain was firmer than is natural in a child of that age, and also of a paler appearance ; there was not any fluid in the ventricles nor at the base of the brain, in fact it appeared to be nearly void of either blood or serum ; there were not any tubercles in either the lungs or abdomen.\*

CASE III.—Mary L., æt. 7, light brown hair, delicate skin, appears as if she is always dropping asleep ; her pupils are natural ; pulse regular ; her functions are well performed ; her temper is very bad ; she will not learn her lessons, but this appears to depend more upon indolence than stupidity ; her appetite is very great ; her head is not too large in proportion to her

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\* It is very difficult to ascertain with any degree of accuracy, the average weight of the healthy brain at different periods of life, and still more, the weight of it in various diseases, as it must be always open to a source of fallacy, resulting from other causes, as the amount of congestion, fluid, and the results of disease ; thus, Dr. Sims has given a table containing the weight of 253 brains in different diseases, and then states, that the weight of the brain cannot be fixed by any means, however accurate, which is further proved by several cases given by him, in which the brain was found unusually large and heavy from various causes, but which did not constitute hypertrophy.

body, but there is considerable projection across the parietal protuberances; she complains frequently of headach, and sometimes vomits in the morning. I was consulted on July 10th, 1842, for a strumous swelling in the neck of this child, and was so struck by her appearance, that I inquired particularly into her history.

I have placed these cases in apposition, in order that we may compare them with regard to their early symptoms, as I think they are chiefly valuable from their accurate previous history, for in none of the cases which have been hitherto published, has there been any stress laid on this point, which, however, is of paramount importance. In the cases related by Andral, headach, convulsions, and epilepsy, appear to have occurred, but they only came under his observation in the second, or acute stage of this state, when the brain was suffering from compression, as in his cases, the dimensions of the cranium were not larger than natural, which must cause a great difference in the symptoms. Thus idiocy, which depends so frequently on atrophy of the brain, may be caused by hypertrophy, if there be much compression, whereas, if the cranium be developed in the same ratio with the brain, there are often no symptoms produced, or but slight ones, as in a case related by M. Scoutteten,\* where a child of five years old was affected with hypertrophy of the brain (with enlargement of the skull) to such a degree, that the head became as large as that of an adult, particularly prominent at the occipital protuberances; the cerebral functions were undisturbed, and the only phenomena which the child presented during life, were the frequent fallings occasioned by the weight of the head, which was carried forward whenever the child wished to run, and a great tendency to sleep when he remained quiet. He died of acute enteritis, and the brain exhibited a great development of all its parts, with only a small quantity of reddish serum in the ventricles.

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\* Archives Generales, vol. vii.

Let us now classify the symptoms which the above cases presented, and see how far they may assist us in establishing a diagnosis.

First, with regard to Intelligence.

There was a peculiar *obtuseness of intellect*, characterized chiefly by *apathy* to external objects, and a great tendency to drowsiness. There also was evinced a *peculiar irritability of temper*.

Andral states, that in adults, headach, with severe exacerbations, is a prominent system ; this also occurred in the last case detailed by me. He also mentions weakness of the limbs, often ending in paralysis, convulsion, epilepsy ; but these symptoms belong to the second period of this state, when it has passed into the acute stage ; but as it is an essential feature of every hypertrophy to develop itself slowly, I have only had an opportunity of studying this state in the first or chronic period, as the two first children died of other diseases before they had reached the second period, which most probably would occur about the second dentition : thus in observation 4th of Andral, the boy became epileptic at the age of seven years, and died comatose, after a fit, at nine years old.

The *appetite was very great* in all the cases which I have noted, and there existed the *peculiar projection of the parietal protuberances*, on which Dr. Munchmeyer particularly insists, and which, I think, may prove a valuable guide in aiding to discriminate this state from chronic hydrocephalus, with which disease it is most frequently confounded. Thus, in the first case related by Dr. Sims, the mother of the child informed him, that they had wished to tap the head at one of the hospitals. And Dr. Hennis Green,\* in an excellent article on this subject, states that he recently had seen a child who had been condemned to death by a medical man, as having water on the brain, but which was a case of simple hypertrophy, and which did not in-

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\* Provincial Med. and Surgical Journal.

terfere with the health of the child. The diagnostic sign which he gives, is the sensation of firmness communicated to the finger, on pressure being made over the fontanelles, in cases of hypertrophy, as contrasted with the fluctuating feel in cases of chronic hydrocephalus; but this could only apply in cases of very young children, or in extreme cases.

The prognosis in children is not necessarily unfavorable, for as it is rather an error of development than an actual disease, there is a natural tendency to return to the normal state; the chief danger, in fact, arising from the occurrence of other diseases, as those attendant on dentition, the exanthemata. It is probable that the rapid and sudden deaths which occasionally take place in the malignant forms of scarlatina (some of which I have myself witnessed, when the throat has been but slightly affected, and when they die in a very early stage with cerebral symptoms, as if poisoned by the virulence of the disease), may be the result of a state of hyperæmia, superadded to this peculiar state of hypertrophy of the brain. I merely hint at this, from having found myself quite unable to explain the cause of death by the *post mortem* appearances in some of those cases which I have unfortunately met with, and which appear to set all treatment at defiance. The causes of this state are very obscure; but are probably dependant on, or connected with struma; and although the observations which have been hitherto published with regard to this state, bear reference to it as chiefly occurring in adult life, yet, I think, we must regard it as the result, either of an abnormal development of the brain, excited before birth, or depending on primary organization. For as Tiedeman and Valentine have established, that the foetal brain is one of the heaviest and most vascular organs of the body, but presenting little trace of organization, the primitive type may continue for some years, and thus give rise to hypertrophy, which may remain for a considerable time without interfering with the general health (as we see occurring in other organs, the liver for instance), unless there be either an increase of intensity in its action, or some

acute disease supervenes. Thus bearing out the general law of hypertrophy, when existing in other organs, and which is its peculiar feature, viz., that the functional disorders which it entails only extend beyond the affected part, according as the part itself extends its sphere of action, thus differing from other organic lesions which so soon affect the whole economy, wherever may be the seat of the disease.

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ART. IV.—*Illustrations of Infantile Pathology*, No. II.—*Measles*. By JAMES FOULIS DUNCAN, A. M., M. B., Fellow of the King and Queen's College of Physicians; Member of the Royal Medical Society, Edinburgh, and Physician to the North Dublin Workhouse.

IN laying before the Profession another paper illustrative of Infantile Pathology, I feel that no apology is necessary for an attempt to turn the opportunities I enjoy to some account, by putting upon record such cases as appear to possess any peculiar importance in this interesting branch of study.

In such an extensive field of observation as the nursery of the North Dublin Workhouse, it is to be expected that a considerable number of instructive cases must, from time to time, occur; but, because isolated instances of disease lose much of the interest they possess, when grouped together for the purpose of comparison, I prefer reserving any observations of this kind I have been able to make to some future period, when I shall have collected a sufficient amount of materials to throw them together with advantage. But in the case of any epidemic occurring in the establishment, I conceive that, for obvious reasons, it is better that its features should be recorded at the time when the events are fresh in memory, and the co-existence of the disease in the city may enable the Profession, either to elucidate the observations made within the walls of the Workhouse, or contrast them with the features it presented outside.

It is naturally to be expected that in the class of persons who form the inmates of a Workhouse, diseases should present some features peculiar to themselves; at all events such an opinion will be justified by a perusal of the cases in the following paper; and although, from this circumstance alone, the subject proposed would not be without interest, yet, I conceive that, independently of this consideration, the general subject of measles, as it occurs in the special period of infancy, is well worth the attentive study of the Profession, inasmuch as in some works the modifying circumstances which arise from early age in this disease are not noticed at all, and in none of them, that I have consulted, is that importance attached to them that they deserve.

From what I have seen I am disposed to think, that even the most healthy form of the disease is not unattended with danger in very early infancy, and that the practitioner in attendance ought consequently to pay the most scrupulous attention to the development of those complications from which the greatest danger is to be apprehended.

In infancy, even in strong and vigorous children, there are two sources from which this is likely to arise; the one depending on the state of high vascular action which is habitual and natural to the brain until the process of dentition is completed: the other on the narrowness of the larynx, which exposes the infant at all times to the danger of sudden death, from even a slight impediment to this delicate organ. The first may prove suddenly fatal by giving rise to convulsions, the last may develop croup, by the tendency of inflammation in the mucous membrane to assume the plastic form at this particular epoch of life; and, as this membrane of the larynx seldom escapes some degree of inflammation in an attack of measles, we are prepared to expect that croup should be not an infrequent complication in the disease. These two casualties, so common in their occurrence, so sudden in their development, so dangerous in their nature, require, in an especial degree, the unremitting attention of the

medical attendant, whose visits should be frequently repeated at short intervals to watch anxiously the first symptoms of their approach, that he may be prepared to treat them when they do occur, with decision and promptitude.

Before, however, proceeding to make any general remarks upon the epidemic, as it appeared in the Workhouse, or to detail any cases, I think it right to give a Tabular View of the entire to the present time, premising this observation, that *every case without exception* that occurred there under my care, is included in the list, and the history continued, not merely to the close of the disease, but to the last period of their remaining under my observation. Hence, some cases are marked as having terminated fatally, although they had completely recovered from the attack of measles, because they subsequently became the victims of another complaint. But in workhouse practice there is this difference from what is usual in ordinary hospitals, that as the patients never leave the care of the physician when they cease to be under treatment, because they are merely transferred to another department of the same institution, he is obliged to meet casualties that otherwise would not come under his notice. But I rejoice to be able to state, that of the survivors, 41 in number, of all ages, there is not one in a delicate condition after the disease, or concerning whom, I think, there is the least probability of any disagreeable relapse; and on comparing the convalescence of the survivors of the present epidemic with that of those of the last year, I can safely say their condition is now much more satisfactory than it was then :

TABLE I.

No.	NAME.	Age.	Date of Attack.	Date of Termination.	Result.	COMPLICATIONS.	REMARKS.
1	John Farnam, . .	1½	March 11	March 14	Died	Double pneumonia, . .	<i>P. M.</i> Mesenteric glands scrofulous.
2	Jane Conolly . .	19 mos.	" 14	" 22	Id.	Exten. Bronchitis; convul.,	No <i>P. M.</i> Child previously delicate.
3	John Brady, . .	11 mos.	" 23	April 12	Recovered	" . . . . .	Fœtid dia. from ear during convalescence.
4	Mary Bateman, . .	10 mos.	" 23	" 6	Died	Convulsions, . . . . .	Very delicate previously. No <i>P. M.</i>
5	Mary Byrne, . .	2	" 25	" 7	Id.	Croup; pneumonia, . .	See case.
6	Mary Hanlon, . .	5 mos.	" 25	May 7	Recovered	" . . . . .	Very delicate previously.
7	Pat. M'Cormick, .	12 mos.	" 27	March 28	Died	Convulsions, . . . . .	See Case.
8	Pat. Caffray, . .	3	" 28	" . .	Recovered	" . . . . .	Had Scarlatina shortly before.
9	Mary Clarke, . .	4	" 30	" . .	Id.	" . . . . .	Id. Right eye remained sore for some time.
10	James Maher, . .	13 mos.	April 5	May 19	Died	Pneumonia; convulsions, .	Degenerated into phthisis. No <i>P. M.</i>
11	James Kenny, . .	7 mos.	" 6	April 11	Id.	Convulsions, . . . . .	Delicate previously.
12	James Solan, . .	20 mos.	" 8	June 17	Died	Croup, . . . . .	Degenerated into phthisis.
13	Michael Dillon, .	8 mos.	" 8	April 12	Id.	Pneumonia; convulsions, .	Very delicate before. <i>P. M.</i> Effusion into both ventricles; crude tubercles in lungs; mesenteric glands scrofulous.
14	Andrew Green, . .	4 mos.	" 8	" 12	Id.	Convulsions; peritonitis, .	<i>P. M.</i> Effusion into both ventricles; lungs healthy; mesenteric glands scrofulous.
15	Catherine Langan, .	15 mos.	" 9	" 11	Id.	Convulsions, . . . . .	<i>P. M.</i> Brain highly congested; no effusion; mesenteric glands scrofulous.
16	Patrick Spain, . .	18 mos.	" 10	" 12	Id.	Convulsions, . . . . .	Had whooping cough previously. <i>P. M.</i> Effusion into both vent.; lungs healthy.
17	Patrick Little, . .	12 mos.	" 14	May 1	Recovered	Bronchitis, . . . . .	Had whooping cough previously.
18	John Foley, . .	9 mos.	" 22	" 20	Id.	Convulsions, . . . . .	Very delicate before. Recovered from measles, and relapsed two or three days before death.
19	Patrick Walsh, . .	10 mos.	" 26	" 23	Died	Convulsions, . . . . .	Prolapsus ani succeeded.
20	John M'Cormick, .	3	May 11	" 31	Recovered	Pneumonia, . . . . .	V. S. performed.
21	Michael Leonard, .	4	" 12	" 31	Recovered	Pneumonia, . . . . .	Id. Delicate previously.
22	John Small, . .	5	" 12	" 31	Id.	Croupy cough; head symp.,	"
23	Ann Synnott, . .	7	" 13	" 31	Id.	Bronchitis.	"
24	John Townsend, .	6 mos.	" 13	" 16	Died	Pneumonia; convulsions, .	Eruption receded before he was seen, never reappeared.
25	Mary A. Bradshaw, .	4	" 15	" 31	Recovered.	"	"
26	James Whehan, . .	3	May 16	May 31	Recovered.	Croup; convulsions, . . .	See Case.

TABLE I.—*Continued.*

No.	Name.	Age.	Date of Attack.	Date of Termination.	Result.	Complications.	Remarks.
27	John Miller, . . .	3	May 16	June 8	Recovered	. . . . .	Took remittent fever subsequently.
28	Thomas Fox, . . .	3	" 18	May 31	Id.	Ulcerated tonsils with a rash like scarlatina on 2nd day, succeeded by measles on 3rd do.	
29	Susan Fleming, . . .	8 mos.	" 20	June 16	Id.		
30	Thomas Rollins, . . .	3	" 24	" 5	Id.	Pneumonia.	P.M. Crude tubercle in lungs; prolap. ani.
31	Eliza Meally, . . .	4	" 25	" 9	Died	Bronchitis, . . . . .	
32	James Hayes, . . .	3	" 25	" 4	Recovered.		
33	Mary A. Williams, . . .	9	" 24	" 11	Id.	Pneumonia; croupy cough,	See Case.
34	Ellen Nicholson, . . .	4	" 25	May 31	Id.	. . . . .	Ophthalmia succeeded.
35	Eliza Nicholson, . . .	7	" 25	June 17	Id.	. . . . .	Erup. very dark; succeeded by rem. fever.
36	Ann Redmond, . . .	11	" 29	" 4	Id.	. . . . .	Eruption very dark; ophthalmia.
37	John Martin, . . .	5	" 27	" 13	Id.	Bronchitis.	
38	Bridget Donohoe, . . .	4	" 28	" 8	Id.		
39	Mary A. Kiernan, . . .	6	" 28	" 8	Id.		
40	James Lacey, . . .	6	June 5	" 13	Id.		
41	Joseph McKiernan, . . .	28 mos.	" 8	" 20	Id.	Ulcerated tonsils; convulsions, &c., . . . . .	See Case.
42	Joseph Thomas, . . .	8	" 8	" 16	Id.		
43	John Lacey, . . .	2½	" 10	" 27	Id.	Pneumonia, . . . . .	Ophthalmia.
44	John Fitzpatrick, . . .	3	" 12	" 20	Id.	. . . . .	Prolapsus ani succeeded.
45	Margaret Keams, . . .	4	" 12	" 20	Id.	. . . . .	Ophthalmia.
46	Letitia Foly, . . .	9	" 11	" 16	Id.	. . . . .	
47	Ann Nolan, . . .	12 mos.	" 16	" 25	Id.	Ulcerated tonsils.	
48	James McCoy, . . .	4	" 19	" 25	Id.	Bronchitis.	
49	William Freeman, . . .	6	" 19	" 25	Id.		
50	James Martin, . . .	8	" 20	" 25	Id.		
51	Fitzgibbon O'Connor, . . .	13	" 20	" 25	Id.		
52	John Daly, . . .	9	" 20	" 2	Id.		
53	Patrick Robins, . . .	6	" 21	" 25	Id.		
54	George Robins, . . .	13	" 21	" 27	Id.		
55	William Reilly, . . .	4	" 22	" 30	Id.	Bronchitis.	
56	John Fullam, . . .	8	" 23	" 29	Id.	Pneumonia.	

TABLE II.

AGES.	MALES.			FEMALES.			Total Recov.	Total Deaths.
	Recov.	Died.	Total.	Recov.	Died.	Total.		
Under 1 Year,	2	5	7	3	1	4	5	6
1—2	2	5	7	0	3	3	2	8
2—5	15	0	15	6	1	7	21	1
Above 5	9	0	9	4	0	4	11	0
Total . .	28	10	38	13	5	18	39	15

TABLE III.

COMPLICATIONS.	MALES.	FEMALES.	TOTAL.
Pneumonia . . . . .	9	3	12
Convulsions . . . . .	10	3	13
Bronchitis . . . . .	5	3	8
Phthisis . . . . .	3	1	4
Croup . . . . .	3	2	5
Peritonitis . . . . .	1	0	1
Ulcerated tonsils . . . . .	1	2	3
Prolapsus ani succeeded . . . . .	2	2	4
Ophthalmia, do. . . . .	1	4	5

*Constitution of the Epidemic.*—The severity of the disease at the commencement was much greater than at the close of the period included in the above returns, as will be at once apparent by a glance at the General Table: indeed, in most of the concluding cases very little treatment at all was necessary. This may have partly been owing to the severe weather and piercing winds which prevailed at the first, but which gradually subsided as summer advanced. The rash, in many cases, appeared at an unusually early period, but did not develop itself fully, and was easily repelled, and this circumstance uniformly indicated great danger, and concurred with the manifestation of some new feature. In some of these we succeeded in restoring

it to the surface, but in others it never reappeared. The colour of the eruption was often dark from the beginning, becoming more so the second or third day, till it became a deep purple, the marks of which did not disappear for several days after the decline of the disease.

*Complications.*—Of these the most numerous were convulsions, amounting to thirteen in all, a circumstance in itself indicating the unhealthy state of constitution that prevailed among the children. Three of these occurred at the commencement of the attack, and were the first symptoms that attracted attention; in others they succeeded on the decline of the eruption, but in the majority of instances they appeared during the height of the disorder.\*

Next, in point of frequency, was pneumonia, which assumed a very severe form, and required decided treatment to arrest its progress.

Under the head Bronchitis I have set down only those cases where the symptoms were well marked, and in which there was sufficient to justify anxiety on the part of the medical attendant. Some of these were in great danger from the quantity of secretion poured into the air tubes. It may, however, be remarked, that contrary to the general impression bronchitis is less frequent in the measles of early infancy than pneumonia, although the mucous membrane might be expected *a priori* to be more generally inflamed than the tissue of the lungs themselves.

Five cases are marked as croup; but three only were of sufficient severity to be set down as decidedly so, although in none of them, probably from the active measures adopted at the very outset, was there a false membrane regularly formed. But this does not appear to me to be a good reason for withholding from

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\* It is a remarkable fact that in the South Union Workhouse, as I have been informed by Dr. Lees, there have been only three or four cases of convulsions altogether; whereas, in the North Union, independently of those mentioned in this paper, there have been a great number.

them this name because there is no reason why the disease may not be arrested before as well as after this formation ; and if so the disease is as much croup then, although it never should reach that stage, as if it should be allowed to run its course without interruption. The treatment adopted in each of these cases was successful so far as the symptoms of croup were concerned.

Only four cases are set down as Phthisis, in which number are included not only those which actually died from disorganization of the lungs, but which from the circumstances of crude tubercles being found in them on post mortem examination, would have ultimately degenerated into consumption. The circumstance, however, of only four children out of fifty-six dying from consumption is worthy of remark, and shews that the opinion is totally unfounded, that measles has a peculiar tendency to develop the disease, especially as of these four two at least laboured under it before they were attacked with measles.

Three cases presented well marked inflammation of the fauces, and ulcers on the tonsils ; in one accompanied by an eruption resembling scarlatina, but which gave way on the third day to a regular eruption of measles. The throat affection was treated by lunar caustic both in the solid form and in solution, and did well. I have not read in any work an account of a complication similar to this in measles.\*

Prolapsus ani succeeded towards the close in four instances ; in one the patient died from phthisis ; in the others it was cured by alterative doses of Hyd. c. cretâ, and Dover's powder, and the muriated tinct. of iron given in injection with gruel, a remedy that answers remarkably well when this state depends on local atony, and not on any organic disease of the bowel itself.

Five cases were followed by a scrofulous ophthalmia, which, however, yielded readily to the ordinary treatment.

**Mortality.**—The total number of deaths amounted to fifteen, but of these it is right to state that seven were in such a state

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\* The inflammation of the fauces and tonsils, however, is mentioned in the Dict. des Sciences Medicales.

previous to the attack, that I think there can be no doubt but that they would have died, even if they had never suffered from the epidemic. In two of these the probable duration of life was not shortened I should say by the disease, while in the remaining five it certainly was. The immediate cause of death was pneumonia in two instances, phthisis in three, and convulsions in ten.

*Treatment.*—In the great majority of cases, particularly towards the close of the period when the disease became mild, little was done except the administration of gentle diaphoretics in suitable doses. Nitre in combination with *mindererus'* spirit, I generally preferred. When there was much cough with any degree of hardness in it, even though there was no bronchitis or pneumonia, a small quantity of liquor antimonialis was added to the mixture. In severe cases, most of which will be found detailed at length, the treatment was more decided, consisting of tartar emetic in larger doses shielded by a drop or two of laudanum to the ounce mixture, with some aromatic water. A combination which not only prevented the stomach and bowels being affected unpleasantly by the remedy, but which determined more energetically to the surface. Calomel and hippo were also given freely when circumstances required their use, but in larger doses and at shorter intervals than I think is generally practised, a mode of administering them from which the happiest effects were produced.

But the principal peculiarity I think to be noticed in the treatment, was the cautious use of wine diluted with water and sweetened; this was given even when there seemed to be a good deal of inflammation present in the lungs, but of an atonic character; when the infant's strength was worn down by the violence of the disease and the indisposition to take nourishment. It was also tried in cases which had suffered from convulsions, or seemed likely to be so attacked from their pale, sickly aspect, large head, and ill-proportioned limbs, and agreed very well with them. Whenever it was found to answer, the quantity was slowly increased, in proportion to the child's age. In speaking of the

use of wine in the present instance, I do not wish it to be supposed that I am an advocate for its adoption when the children are strong and healthy, and able to resist the attack of illness, but the constitutions I have had to deal with were so broken down, in many cases long before their admission to the Workhouse, that I found myself compelled to resort to stimulants that would otherwise have been unnecessary, and I was gratified to find such beneficial results produced by so simple a remedy.

I shall now proceed to detail some of the cases at length, the better to illustrate the features of the epidemic and the treatment adopted, and shall merely observe, that as I was obliged to take all the notes of the cases myself, in the midst of the hurry of my other duties at the Workhouse, which are sufficiently numerous, I was unable to do more than make a brief memorandum of the principal points that occurred.

*CASE I.—Measles complicated with Convulsions, simulating Bronchitis.*

On the morning of the 26th March, I was sent for, at six o'clock, A. M., to see Patrick M'Cormick, a fine stout infant twelve months old, who was taken very unwell. He had been some days in hospital for an attack of whooping cough, where he was under treatment, but the symptoms were so mild as not to require any decided measures. He had been otherwise in perfect health the preceding day, and had slept well till two o'clock in the night, when he became suddenly, and without any obvious cause, oppressed in his breathing, which was short, laboured, and accompanied with a loud mucous wheezing. He did not exhibit any symptoms of convulsions, except that occasionally the dyspnoea became more severe, and he worked with his tongue, protruding and retracting it repeatedly, during which periods it assumed a deep livid colour. Mr. Brown, the Apothecary, had put him into a warm bath, and administered several strong emetics previous to my arrival, but none of these had taken any effect. To a casual observer the case, at this time, presented all the symptoms of an intense bronchitis, accompanied with a copious secretion into the bronchial tubes; and the most

effective remedies would have seemed to be those, which by removing the secretion, would have enabled the lungs to discharge their functions, but I was more disposed, from knowing the previous history of the case, to consider the symptoms dependant on the state of the brain, and, accordingly, as the emetic plan had failed, I ordered a turpentine injection to be administered immediately, and calomel in large doses (two grains each) to be given every hour.

11 o'clock, A. M. Passed a great deal from the bowels since morning; discharges of a light yellowish green colour; breathing easier; wheezing much less; eyes and lips congested; an obscure rash, which the nurse stated to be measles, has appeared and receded since last visit; takes the breast freely. On consultation with my colleague, Dr. Kirkpatrick, we determined to take 4 oz. of blood from the arm, and to add some ipecacuanha to the calomel, and as he was suffering from painful dentition the gums were freely divided.

V. S. ad  $\frac{3}{4}$  iv.

R Calom. gr. ij.

Ipecac. gr.  $\frac{1}{2}$  2dis horis.

1 o'clock, P. M. Was greatly relieved by the bleeding. The dyspnœa and wheezing almost immediately and entirely disappeared.

Cont.

5 o'clock. The nurse states he has had an attack of convulsions since last visit. The pupils are contracted, and the eyes convulsively turned upwards under the lids. On being roused from the state of stupor there is evident strabismus; constant convulsive movements of the lips, and of the hands to the mouth; respiration very short and quick; eyes congested; rash, though faint, is perceptible.

B. T. statim.

Sinap. pedibus sing.

Vesic. Nuchæ.

Cont. Pulveres.

8 o'clock, P. M. Bowels a good deal acted on; seems more lively; respiration less oppressed; mustard poultices smarted him in about ten minutes; still very restless, tossing his hands and arms about; abdomen swelled and somewhat hard.

Enema foetid. c. Sp. Tereb.

Cont. pulveres 2dis horis.

March 27th. Did not sleep till towards morning; bowels well moved till four o'clock, when they became quiet; took the breast freely and drank a good deal; is at present asleep; respiration short; pulse weak, but not so quick as last night; skin cool, covered with a dusky eruption of measles; rolls his head from side to side very much.

Warm bath with cold to the head.

Wine and water.

Mixture containing Carbon. Ammon.

3 o'clock. No reaction has taken place; respiration still short; occasional snapping of the hands.

During the course of the night he was frequently convulsed, until death terminated his sufferings at 2 o'clock, A. M.

*Remarks.*—Owing to particular circumstances no examination of the body took place; yet, I consider the case sufficiently interesting, notwithstanding this defect, to be laid before the public. No one can for a moment hesitate to attribute the fatal termination to the affection of the head, although the symptoms simulated so exactly those of suffocative catarrh. There was, on the one hand, the laboured breathing, the trachæal rattle, the livid lips, that indicate this affection; and on the other, there was the absence of any marked convulsion, or other symptom of cerebral disease. Yet the history of the case, as well as the results of treatment, evidently proved that the latter was the real cause of all the phenomena. The child had been perfectly free from any serious affection of the chest, and in the middle of the night was attacked suddenly, and without obvious cause, with these symptoms, in a degree of intensity never witnessed

at the commencement of an ordinary attack of bronchitis. The emetics too, which Mr. Brown had administered previous to my arrival, were of the strongest description, but had failed to produce their usual effects. This form of convulsion is not rare, and deserves consideration from the liability of a practitioner being led to mistake it for what it so much resembles, and so to overlook the more important disease that is insidiously advancing in the brain. The following case illustrates very forcibly its deceptive nature, and the danger that invariably attends it. One day when accompanying the Board of Guardians round the house during a visit of inspection, I was hastily summoned to the nursery to see an infant, named Mac Namara, ten months old, supposed to be choking in consequence of having swallowed something that had stuck in her throat. On my arrival I found every symptom present that might be expected under such circumstances. The child was gasping at irregular intervals; the lips were livid, and death seemed close at hand. I instantly passed a gum elastic catheter down the œsophagus to the stomach, but found no obstruction to its progress; an injection containing turpentine was thrown up, and the child placed in a warm bath, when the symptoms slowly disappeared. The next morning the child was perfectly well, had slept soundly, and had no return of the convulsion. I wished, however, to examine the state of the lungs, and desired the mother to strip the chest for this purpose, and in the very act of doing so, the former symptoms returned in all their violence, and although every remedy that could be thought of on the moment was adopted, the child died upon the spot. On examination after death there was found effusion into both ventricles, but no disease of the pulmonary organs.

Cases somewhat similar to these have been described by Sir Henry Marsh in the fifth volume of the Dublin Hospital Reports, under the name of spasm of the glottis, and I have no hesitation in believing that they are the same disease, only a little modified. They occurred in the same class of persons,

and under very similar circumstances, and commenced suddenly at night. In one respect, however, there seems to be a striking difference in the symptoms, for he describes the paroxysm as attended with a laryngeal sound, and as terminating in a long drawn whoop, or crow, on inspiration. But in the cases I have observed there was nothing analogous to this, there was merely the trachæal wheeze, common in ordinary bronchitis, but in an aggravated degree, resembling that audible on the approach of death in adults.

In reference to the treatment of this affection, Sir H. Marsh particularly insists upon the change of the nurse and removal to the country as the most important steps to be attended to, and he mentions that he has known the disease to return again and again, after it had entirely disappeared, on the infant being merely brought back to reside in the city, and as often to be perfectly removed by restoring it to a pure atmosphere. But while I freely admit the paramount importance of securing good air for the little sufferers by an immediate removal to the country, I consider that a great deal is also due to deficient nourishment, bad food, and the unhealthy milk of the mother. Accordingly I have found in such cases the greatest advantages follow from the administration of tonics to the mother, such as quinine, or the infusion of bark in combination with a small proportion of tartaric acid, coupled with a moderate quantity of porter and wholesome nourishing food.

**CASE II.—*Measles ; Convulsions ; Effusion into Ventricles.***

Patrick Spain, æt. 18 months, had been some time ill with hooping cough, in the commencement of which he had suffered from a severe attack of pneumonia, but from which he had recovered several weeks. He was quite well on the 9th of April, except that the right eye had been somewhat inflamed for a day or two previously. On that evening he was very hot and restless, and an eruption of measles appeared on the 10th inst.

Emetic of Hippo Wine.

Mist. Nitri coch. med. subinde.

7 o'clock, P. M. No effect from the emetic, though frequently repeated ; rash has disappeared.

B. T. statim.

Ipecac. gr. vi. statim.

Cont. Mist.

April 11th. No vomiting ; great purging ; eruption a little more out ; coughs a great deal ; great thirst.

7 o'clock, P. M. No vomiting ; great purging.

P. Dov. gr. ij.

B. T. h. s.

April 12th. Diarrhœa checked ; no regular convulsion, but the breathing has been laboured all night, and accompanied with a loud trachœal rattle. Died in the course of the day.

*Post Mortem*.—Brain not very vascular ; considerable effusion into both ventricles.

Lungs *healthy* ; a few small spots, solidified but not vascular or congested, which seemed to be the remains of a previous pneumonia.

Mesenteric glands enlarged, but healthy.

CASE III.—*Measles ; Convulsions ; no Effusion into Ventricles.*

Catherine Langan, æt. fifteen months, an infant previously healthy ; after two days' illness was covered with measles on the morning of the 9th of April ; some cough.

Emetic Hippo Wine.

℞ Ant. Tartar. gr. i.

M. Mucilag. ʒ iv.

Sumat coch. min. frequenter.

April 10th. Breathing oppressed ; slight hoarseness ; eruption remained out only for about an hour ; has not since returned ; throws up with emetic mixture ; a good deal purged ; dejections green.

B. T. statim.

℞ Calom. gr. i.

Ipecac. gr. ½. M. 2dis h.

Vesic. Sterno.

7 o'clock, P. M. Considerable wheezing in chest, which was somewhat relieved by bath ; breathing is still short and laboured ; no distinct convulsion ; purging ; no expectoration from medicine.

Hirud. ij. temporibus.

Enema Tereb. statim.

Cont. pulveres.

April 11th. Took strong convulsions last night at 11 o'clock, which lasted until 2 o'clock, when she died.

*Post Mortem.*—Brain very vascular throughout ; no effusion of any amount into ventricles.

Lungs congested, but not pneumonic, except in one small spot of the left lung.

Mesenteric glands were generally enlarged ; a few were in the first stage of scrofulous degeneration.

CASE IV.—*Measles ; Croup ; Double Pneumonia.*

Mary Byrne, æt. 2, a fine robust child, had the rash of measles out for three days, and was doing well till the evening of the 26th of March, when at 8 o'clock, P. M., on my visit to the Work House, I found her breathing had assumed a distinctly croupy character ; she had previously had a slight cough, but no dulness on percussion, nor râle in the respiration ; she was ordered immediately,

V. S. ad 3 iv.

℞ Antim. Tartar. gr. ii.

M. Mucilag. 3 iv.

Sumat coch. med. frequenter.

Calom. gr. ii. tertiis horis.

The bleeding was attended with instant relief ; in the course of a few minutes the croupy sound had entirely disappeared.

March 27th. Had slept well ; was not much sickened by the mixture ; the bowels were moved five or six times ; no remains of the croupy sound in respiration this morning, not even when she coughs ; not so much oppressed in her breathing as

last night, but she coughs a good deal ; no dulness on percussion, but there are loud bronchitic râles through the chest.

Cont.

March 28th. Had a slight return of the croupy respiration last night, which did not continue ; slept well ; some jelly-like discharges from the bowels ; rash fading ; medicine does not vomit her.

Ol. Ricini, ʒi

March 29th. Slept a good deal last night ; a little hoarse ; not much cough ; bowels regular ; no dulness ; bronchitic râles through chest.

M. Polygalæ c. Ammon. Carbon.

Calom. gr.  $\frac{1}{2}$ .

Ipecac. gr.  $\frac{1}{4}$ . M. tertiis horis.

March 30th. Was very weak and low yesterday evening ; got one ounce of wine in water from which she derived much advantage.

Vini ʒi.

Cont. cætera.

March 31st. Has cut several teeth ; croupy respiration and cough are more marked to-day ; when the child is quiet this sound disappears almost entirely, but becomes more manifest whenever it is excited by any person disturbing it ; some dulness over right scapula ; expectoration very thick and viscid, and can be only removed from the mouth by the nurse introducing her finger for the purpose.

Vesic. Sterno.

Calom.

Ipecac. āā gr.  $\frac{1}{4}$ . M. tertiis horis.

April 1st. Was very ill last night with wheezing and oppression of breathing, which was relieved with difficulty by the tartar emetic solution ; loud croupy sound of respiration this morning.

Cont.

April 3rd. Was very bad yesterday with croupy respira-

tion ; the tartar emetic solution did not make her vomit, but the nurse secretly, and without directions, puffed some tobacco smoke into her mouth, which immediately had the effect of making her throw up two very thick, cord-like pieces of mucus ; expectoration came up freely afterwards from the use of the mixture.

To-day has been very much purged ; dejections watery ; throws up freely ; no croupy respiration.

Vini 3i.

M. Cretæ C.

April 5th. In a very precarious state ; breathing short and laboured ; very pale ; blister has assumed a dark unhealthy aspect, which has been washed with lotio nigra, and a poultice applied ; breathing slightly stridulous ; no cough except after drinking.

Vini 3ii.

April 6th. Respiration rather short ; blistered surface very much inflamed and unhealthy ; spots like pemphigus gangrenosus appearing over the body ; bowels very free ; dejections dark and watery. In about an hour after the visit the child gradually sunk.

*Post Mortem.*—Subcutaneous layer of fat, very thick ; thymous gland appeared much larger than usual in an infant of this age, and was infiltrated as well as the cellular membrane in its immediate vicinity with serum. The lungs were partially affected with pneumonia in different stages of its progress. One whole lobe was in that of purulent infiltration, and others in the stage of solidification. The larynx exhibited traces of inflammation, and the mucous membrane on the rima was inflamed, and in one spot on the very edge there was a small ulcer. The trachea the whole way down to its subdivisions was very vascular, thickened, and red. The chest only was examined.

*Remarks.*—This case is worthy of attention because of the peculiar condition of the thymous gland, discovered after death,

combined with the occasional croupy sound of respiration produced whenever the child cried or was annoyed at any thing. This symptom was first pointed out to me by Dr. Doherty, who frequently gives me the benefit of his presence in my daily visits, and who thought it corresponded with the descriptions recently published of thymic asthma. The gland was certainly much larger than I have ever seen it at this age, and from its supposed erectile properties would be quite capable of producing the symptom. But although Dr. Doherty thought he perceived, during life, a swelling at the anterior part of the neck corresponding to the situation and time of this erethism, I was not able to satisfy myself that this latter phenomenon took place, at least to any sensible extent.

The frequency and fatality of pneumonia in childhood as contrasted with advanced life form a very interesting subject of consideration, and one to which I may, perhaps, on some future occasion, revert. At present I am not able to do more than point attention to the fact, and to state that the following results, extracted from the second Report of the Registrar-General of Births, Deaths, and Marriages, throw an important light on the subject.

The deaths of the metropolitan district are divided into three classes, besides being arranged under the head of each disease, viz., those under 15 years of age, between 15 and 60, and above 60.

In one table there is given a return for each of the five weeks ending Saturday, January 11, 1840, January 18, January 25, February 1, February 8. Under the head of Pneumonia the totals of these weeks for each period is as follows :

Under 15, . . . . . 257.

15 to 60, . . . . . 73.

Above 60, . . . . . 30.

This remarkable difference would be still more instructive if the distinctions of age were made more minute, and we were enabled to separate from the rest the proportion occurring

during infancy. How far this is owing to a less energetic mode of treatment it is not easy to say, but I am at present strongly inclined to believe that a false tenderness in treating the disorders of infancy mildly is, perhaps, partly, at least, the cause of this result, and that when practitioners adopt a more decided tone in their efforts we shall see a great improvement in this respect. And what satisfies me that there is some truth in this opinion is the fact, that pneumonia, when it proves fatal in infancy, very rarely is found to have advanced beyond the stage of hepatization, whereas the reverse of this is what is generally observed in adults.

The case before us is one of those rare instances in which the lungs are found to have advanced to the stage of purulent infiltration in infancy, and this circumstance, coupled with the high degree of inflammation about the larynx, proves that no other termination could have been expected, while the remarkable relief experienced at the commencement from the use of the lancet shows how important this remedy is in cases of unusual danger.

CASE V.—*Measles ; Croup ; Recovery.*

James Solan, æt. 20 months, had been always a delicate child since admission some months ago, during which time he has suffered from dentition and hooping cough which he had severely. He has been a good deal wasted and weakened by his complaints. For the last two days has been sick and feverish, but this was attributed to teething. Was bathed last night; eruption appeared in a healthy form this morning, April 8.

Emetic of Hippo Wine.

R. Mist. Mucilag. ℥iv.

Vini Antimon. ℥ij.

Sumat coch. min. frequenter.

April 9th. Is bathed in perspiration, and sleeping soundly, medicine operated both up and down.

46 Dr. Duncan's *Illustrations of Infantile Pathology.*

8 o'clock, P. M. This evening the respiration and cough have assumed the character of croup in a well marked form.

V. S. ad  $\frac{3}{4}$  iv.

Calomel. gr. i.

Ipecac. gr.  $\frac{1}{2}$ . M. 2dis horis.

April 10th. Blood buffed and cupped; got great relief from the bleeding, and immediately afterwards lost the croupy sound in his breathing; a good deal purged; no vomiting nor expectoration; cough is much less; eruption manifest, but faded; considerable thirst.

Vesic. Sterno.

Calom.

Ipec.  $\frac{3}{4}$  gr. i. M. 3tiis horis.

7 o'clock, P. M. Medicine vomits and purges him; dejections watery and greenish; is much relieved, but the hoarseness has returned in a slight degree within this hour; is covered with perspiration; blister did not rise in two hours and a half.

Vesic. iterum.

Repetantur pulveres.

April 11th. Breathing easy; powders make him throw up; not much purged; blisters rose well; coughs only at night; the cough resumes the character of hooping cough; appetite returns; dejections this morning yellow and consistent.

Vini  $\frac{3}{4}$  i.

Arrowroot and Sugar.

7 o'clock, P. M. Is quite quiet; appetite good; sleeps well; bowels less purged; dejections natural.

April 12th. Much better this morning.

Cont. Vinum, &c.

April 14th. Cut four back teeth last night; continues to improve.

April 15th. Breathing quite easy; cough is again become

severe and frequent, and accompanied by a loud kink ; some prolapsus ani.

R. Tinct. Cinchon. C. ʒiij.

„ Camph. C. ʒij.

„ Cantharid. ʒi.

Sumat coch. min. subinde.

April 16th. After taking a teaspoonful of the mixture last night became quite sleepy, rolled his eyes in their sockets and moaned a great deal. This morning the same symptoms recurred on getting a second dose ; is now free from any appearance of oppression.

Omitt. Mistura.

Cont. Vinum.

April 28th. The child continues to improve in health and strength ; though much exhausted, is now recovering weight and flesh ; appetite good ; the quantity of wine has been increased to two ounces daily, and he has been allowed a little meat.

*Remarks.*—This case deserves attention from the suspension of whooping cough during the eruption, and its return on its disappearance. After continuing to improve for some weeks he began again to decline, and died from consumption on the 17th June.

#### CASE VI.—*Measles ; Peritonitis.*

Andrew Green, æt. 4 months, was a stout, healthy infant from birth, but had been in hospital about a week previously to the 7th of April for a threatened attack of hydrocephalus, from which he recovered. On the evening of that day he was seized with a fit which had nearly terminated his life. It seemed, from the description I got of it, to have been more of the nature of coma than a regular convulsion, but yielded to the exhibition of a turpentine injection, a warm bath, and repeated doses of calomel. The child did not appear to have been labouring under any previous sickness, but to have been seized suddenly. On the

morning of the 8th there was no appearance of convulsion and an eruption of measles had taken place.

April 9th. Eruption well out on body ; some cough ; bowels regular.

Calom. gr.  $\frac{1}{2}$ .

Ipecac. gr.  $\frac{1}{4}$ . 3tiis horis.

April 10th. Is this morning moaning very much ; body quite stiff ; head very much retracted ; eyes turned up ; purged a good deal ; not much cough.

Hir. ij. temporibus.

Calom. gr. i.

Ipecac. gr.  $\frac{1}{2}$ . 2dis horis.

B. T.

7 o'clock, P. M. Relieved after the leeches, and still more so after the bath ; diarrhœa ; dejections watery and greenish.

Adhib. Vesicat. Occipiti.

Curetur Ung. Hydrar. postea.

April 11th. No convulsions ; eruption more out ; a hard flag is perceptible near the umbilicus, with an erysipelatous blush on the surface, and another on the left thigh ; not much purged ; dejections this morning yellow ; is very cross.

Contin.

7 o'clock, P. M. Head somewhat retracted ; fingers and toes clenched ; not purged.

B. T. statim.

April 12th. In short convulsions all night and this morning ; died towards evening.

*Post Mortem.*—No particular appearance on external surface.

Brain not unusually vascular, but the venous sinuses were turgid with black blood ; considerable effusion into both ventricles.

Lungs healthy ; gall bladder white and crupty ; inferior margin of liver of a dark green colour.

On cutting into the abdomen several ounces of a greenish yellow fluid were found in its cavity. The abdominal peritonæum, as well the mesenteric as the omental portions, was very vascular. Intestinal tube healthy, mesenteric glands commencing to be affected with scrofula.

CASE VII.—*Measles ; Intense Bronchitis ; Pneumonia ; Convulsions ; Recovery.*

Mary Anne Williams, an infant 9 months old, was admitted into the Workhouse May 23, 1842, and into the hospital of the institution May 24, having been some days ill in measles, the eruption of which was then faded over the body, and obscure. There was a constant suffocative cough, of a harsh croupy character ; the chest sounded clearly on percussion ; bronchitic râles audible by the stethoscope ; diarrhœa ; dejections greenish.

B. T. statim.

℞ Ant. Tartariz. gr. ij.

Tinct. Opii gtt. iv.

Mist. Mucilag. ʒij. M.

Sumat coch. minim. frequenter.

May 25th. Breathing much more oppressed ; cough has become incessant, and as if the lungs were completely stuffed up ; got the mixture twelve or thirteen times, but was only once vomited.

Achib. Vesic. Sterno statim.

Sinapism. pedibus.

℞ Calom.

Ipecac. āā gr. i. M. 2dis horis.

Mist. Polygal. c. Ammon. Carb.

Coch. med. frequenter.

Half past 7 o'clock, p. m. Child somewhat relieved, but is still greatly affected with the cough as before ; had a slight convulsion through the day ; no vomiting from powders.

Injic. Enema Tereb. statim.

B. T. h. s.

Sumat pulveres om. horâ.

May 26th. Greatly relieved ; less dyspnœa ; scarcely any appearance of suffocation or throat affection ; got fourteen powders since the preceding evening, which made her throw up freely ; chest sounds clearly on percussion ; bronchitic râles through the lungs ; took the breast freely ; bowels slightly purged ; dejections greenish ; is cutting front teeth, and the gums are very hot and tender ; tongue white ; blisters rose well.

Gums to be lanced.

Ol. Ricini ʒi.

Sumat pulv. ʒiis horis.

Cont. Mistura.

May 27th. Cough, though softer, is still troublesome ; considerable dyspnœa remains ; not so much purged ; when excited so as to cry, inspiration becomes croupy, not otherwise ; there is some dulness at base of lungs posteriorly, and crepitus can be heard there ; bronchitic râles audible in right lung ; got eight powders and threw up after each ; cut two teeth since yesterday ; takes the breast well.

Unguent. Oxidi Zinci parti ves.

Vini ʒi.

Cont. cætera.

May 28th. Much better ; cough softer ; got eight powders, vomited after each ; not so much purged ; dulness nearly gone ; respiration freer ; crepitus larger and softer ; slept well after the wine ; blister is still sore.

Vini ʒ iss.

Catap. Sterno.

Arrowroot.

Cont. cætera.

May 31st. Blister very sore still ; slight dyspnœa ; no purging ; appetite good.

R. Calom.

Ipecac. āā gr.  $\frac{1}{2}$ . M. ʒiis horis.

June 6th. Child improving in flesh, strength, and weight ; soft mucous râle near base of left lung ; respiration otherwise tolerably good.

June 12th. Discharged quite well.

*Remarks.*—When this case first came under my notice I felt great apprehensions as to the result; the eruption had been out several days, the child had been exposed to cold and hardship, and the extent of bronchitis in the lung was so great, that I feared it would not have strength of constitution sufficient to endure the remedies necessary for cure. But its sufferings were so much increased, and the danger of suffocation became so imminent on the 25th, especially in the evening, when the nurse reported to me, that in addition to the other symptoms an attack of convulsions supervened, that I thought the case almost hopeless, and determined upon the adoption of the very vigorous measures that are detailed, and to which particularly, I believe, the child's recovery is to be attributed. In such cases mild remedies and minute doses are perfectly useless, and the practitioner has no alternative but to adopt remedies whose strength bears a direct ratio to the violence of the symptoms, if he would hope to overcome the disease; and I believe that the recovery in this case would have been more prompt had I permitted the powders to be continued for some time longer at the shorter interval of an hour, instead of directing them to be given every third hour, as was the case on the 26th inst.: but I was anxious to act cautiously in the use of such a remedy as calomel with so young a child, and therefore took the first opportunity of diminishing the frequency of the dose when the urgency of the symptoms was somewhat abated. Much benefit likewise I attribute to the use of the wine in this case, promoting sleep, increasing appetite, and supporting the strength of the patient, and this too at a time when I felt it necessary to continue the calomel and hippo to reduce the inflammation of the lungs.

I cannot help looking back on the history of this case with peculiar satisfaction and thankfulness.

CASE VIII.—*Ulceration of the Tonsils ; Eruption like Scarlatina ; Measles ; Recovery.*

Joseph M'Kiernan, a fine healthy infant, but with a rather large head, twenty-eight months old, was seized suddenly on the evening of the 7th June, 1842, with obscure convulsions; stupor; quick and spasmodic breathing; hiccough; the eyes were red and congested, the pupils contracted and insensible to light; the bowels were confined, the belly hard and full. He had got two injections and a warm bath before my arrival, but they had not acted on the bowels nor produced any change. I immediately put him into a bath at a temperature of 108° F. and poured cold water on his head, which made him cry, and partially restored sensibility, but not permanently. I then ordered mustard poultices to his feet and legs; a blister to the nape of his neck, and two grains of calomel to be given every hour.

June 8th. No amendment took place till after the blister rose, which was in about three hours; bowels were slightly opened by the medicine; he seems quite conscious this morning, and stretches out his hand good-humouredly when spoken to, but does not distinguish his mother from other persons.

Rep. Cal. gr. ii. 2dis horis.

1 o'clock, P. M. My colleague, Dr. Kirkpatrick, on visiting the case at this hour, recognized a faint rash on the surface like scarlatina, and on examining the fauces we found them red, swelled, and ulcerated; in other respects the child was better; I immediately touched the tonsils with solid nitrate of silver.

10 o'clock, P. M. Child sleeping quietly; bathed in perspiration; some rash on chest; coughed a good deal; bowels well freed; got six powders since morning.

Tonsils touched a second time.

℞. Antim. Tartar. gr. ii.

Nitri ʒ i.

Aq. Menth. Pip. ʒ iv.

Tinct. Opii gtt. vi. M.

Coch. minim. subinde.

Omr. pulveres.

9th. No eruption visible ; nurse says his skin was very red this morning ; is much more lively ; eyes of natural brilliancy ; greatly vomited and purged through night ; slept at intervals ; throat looks better ; cough, softer and freer.

R. Vini Antim. ʒ ii.

Nitrat. Potas. ʒ i.

M. Mucilag. ʒ iv.

Tinct. Opii gtt. vi. M.

Coch. min. subinde.

10th. Yesterday evening began to sneeze several times, and the eyes became sore and watery ; at the same time the rash of measles appeared upon the face ; this morning it is out on the body ; appetite good ; can swallow easily ; thirst ; not much diarrhoea ; coughed a good deal, but the cough is soft ; medicine sickened him ; is quite lively.

Cont. Medic.

11th. Very lively to-day ; skin cool ; measles distinctly out, but thinly scattered ; not purged ; some appetite.

Cont.

14th. Last night, in consequence of exposure in bed, got excessively cold ; the nurse took him into her own bed ; he is now warm and perspiring, but has considerable cough ; quite lively ; appetite good.

Repet. Mistura.

22nd. Discharged ; quite well.

*Remarks.*—This case is worthy of consideration in consequence of the imminent danger in which the child was placed at the commencement of the attack, and the resistance exhibited to the strong remedies applied for the relief of the state of convulsions. In the use of baths in affections of this nature I believe they often prove ineffectual from the low temperature at which they are given ; parents or nursetenders objecting to have them hot from a foolish fear of their producing faintness. But the state of cerebral congestion at such times has such an influence upon the general system, that I believe this apprehen-

sion is entirely groundless ; but even if danger of this kind should ensue, the remedy is simple and speedy, to remove the child from the water at once. The temperature here tried was 108° F. and I can say, from the sensation conveyed to my hand, that it might have been easily used much warmer. Not the least symptom of syncope appeared, although the child was permitted to remain eight or ten minutes in the bath. Having already said so much of the utility of calomel given in large doses at short intervals, I shall not add anything farther at present, except to say, that I believe it was absolutely indispensable in this instance, and that the little trouble and danger subsequently experienced by this child was owing to the decided manner in which this remedy was administered at first.

Are we to suppose that the rash which appeared on the second day was scarlatina or not ? The time of its appearance and the state of the tonsils are in favour of this opinion ; the evanescent manner in which it showed itself, and the eruption of measles at its natural epoch, militate against it. But everything in what I have seen of scarlatina, leads me to believe, that it is far less regular in its progress, and more faint and evanescent in the eruption, than measles is ; and hence I do not attach much weight to this circumstance. But what I think strongly proves that it was not scarlatina is the fact, that there had not been a case of that disease in the house for some time previous, nor has there been since ; and the occurrence of tonsillitic inflammation in other cases of measles during the epidemic, though unnoticed by any author I have seen, is sufficient to prove to my mind that it was only an unusual variety of the complaint.

#### CASE IX.—*Measles ; Croup ; Convulsions ; Recovery.*

James Whelan, æt. 3, was admitted into hospital, May 16th, 1842, suffering under an attack of measles, the eruption of which was out on his body ; his eyes were tender, and were partially covered with a purulent secretion ; there was considerable swelling externally about the throat ; on examining the fauces the ton-

sils were red, swollen, and inflamed ; there was a dry, stridulous cough, but not very frequent. On percussion the chest sounded clear. Diarrhœa.

Ol. Ricini, ʒii.

1 o'clock, P. M. Cough has become much more severe, harsh and stridulous, with a marked croupy character ; skin cool ; chest clear ; respiration healthy.

V. S. ad ʒ iv.

R. Calom.

Ipecac. āā gr. i.

Sumat ʒtiis horis.

R. Antim. Tartar. gr. ii.

Aq. Cinnam. ʒ iv.

Tinct. Opii gtt. x.

Coch. min. frequenter.

May 17th. Got a great change after being bled ; became cold, and worked in convulsions ; this morning there is very little eruption out ; very little cough, which has lost almost entirely its croupy character ; medicine has sickened him very much ; looks heavy and sick ; pulse 120 ; skin hot ; no diarrhœa.

Abrad. Cap.

Vesic. Nuchæ.

B. T. statim.

Vini ʒi. Cont. pulveres.

May 18th. Blister rose well ; less heavy in himself, but still considerably so ; greatly relieved by the bath ; was previously almost suffocated in his breathing from dyspnœa ; to-day there is considerable cough, of harsh ringing character ; wine agreed well with him, slept after it ; no rash visible to-day, but came out when he was put into the bath ; not much purged ; no vomiting.

Sinap. pedibus singulis.

R. Calom. gr. ½.

Ipecac. gr. i. M. ʒtiis horis.

Vini ʒii.

19th. Pulse 108; skin cool; no purging, nor vomiting; little cough, which is soft.

Sumat pulv. h. s. tantum.

M. Paregor. coch. med. sub.

Vini ℥ii.

22nd. Continued to amend till to-day, when a paroxysm of coughing came on which seemed to partake of the nature of croup, and of hooping cough intermixed; bowels free.

Hir. ii. Laryngi anteriori.

Sinap. pedibus.

Vini ℥ii.

23rd. Pulse 108; appetite good; much better; cough diminished.

31st. Quite well; discharged; cured.

*Remarks.*—The principal points to be considered in this case are, first, the disappearance of the eruption after the bleeding, and second the coexistence of croup with a healthy state of the lungs. How far the sudden recession of the rash is properly to be attributed to the use of the lancet, is perhaps not easy to be determined; the operation itself is calculated to expose the infant to cold, and this circumstance, which cannot always be guarded against, as much as any other may tend to produce the effect; but whatever may have been the cause, such an occurrence must be looked upon as highly dangerous, and therefore to be treated with that decision and promptitude that proved here so eminently successful. It is satisfactory for us to know, that however alarming the recession of the eruption may be, it is not necessarily fatal, even though it may never be re-established in such a way as to resume the natural course of the disease.

The second point is also of importance, because, on the one hand, we are enabled to take measures for the *prevention* of the pneumonia that so constantly succeeds an attack of croup, and prevents a successful termination to a case that might otherwise have recovered; and on the other, we are encouraged to attempt to give relief by operation, should our efforts for the cure of the local affection unhappily disappoint our expectations.

*Conclusion.*—I feel that this paper has extended to a length I had not anticipated when I began to write, but I thought as I proceeded, it would lose much of its value were I to deprive it of that completeness it possesses in consequence of its embracing the whole period of the epidemic since its appearance, till the date of the last case recorded in the list. It has since become so mild in its form, and extended to the larger children, that I do not conceive it would be productive of any advantage to pursue the observations farther, especially as my design was simply to give a few practical illustrations of the disease as it occurs in infancy, a service that I trust will not be unacceptable to the members of the Profession generally.

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ART. V.—*Cases, with Observations on certain Malignant Diseases of the Skin and Subcutaneous Cellular Substance of the Head and Face.* By L. BYRON, M. D., Surgeon of the County of Meath Infirmary; Corresponding Member of the Dublin Obstetrical Society, &c. &c.

THE imperfection and inaccuracy of our various nomenclatures, like our knowledge of cutaneous affections generally, is felt and acknowledged by all those who have attempted to test or arrange the result of their experience in such cases by any written authority. A more perfect practical knowledge of those confessedly intricate, and in many instances intractable complaints, with a more suitable application of therapeutic agents in the treatment of them, can alone remedy the defect here complained of.

The truth of the foregoing proposition seems to apply with peculiar force to malignant cutaneous affections of the head and face. For example, Lupus, first alluded to by Hippocrates under the title of eating or gnawing herpes, “ΕΠΙΗΤΕΣ ἔσθιόμενοι,”\* and lately introduced by Alibert, Willan and Bateman, is by Sir B. Brodie and Makenzie regarded as a

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\* Hippocrates Predictorum, lib. 2, ed. Fæcs. Francoparti, 1621.

term synonymous with cancer; and according to Forester,\* Bateman, Mr. S. Cooper, and others, it is described under the denomination of "noli me tangere." And again, malignant ulcer of the eyelid, described and figured by Dr. Jacob† of Dublin, under the name of a "destructive ulceration of a particular character which he has observed to attack and destroy the eyelids and extend to the eyeball, orbit, and face," is by Messrs. Travers,‡ Laurence,§ Muller,|| Makenzie,¶ &c., described as cutaneous cancer.\*\* Rayer alone describes this affection under the head of lupus exidens.†† He says, "the lower eyelid is occasionally attacked with lupus exidens, and the ulcerations generally spread to the skin of the cheek, and to the conjunctiva palpebralis. The eyeball, in this case, imperfectly protected, inflames, the conjunctiva thickens, the cornea loses its transparency, and by and by becomes so dim that total blindness follows; if the eyelids are not entirely destroyed, the sores in healing cause their eversion; the eyes then appear of twice their usual size, a circumstance which, added to the vivid red of the conjunctiva, produces hideous deformity."

Whatever doubt may exist as to the exact nature of those affections, all are agreed that they are exceedingly unmanageable, and for the most part baffle the utmost skill of the most experienced practitioners, running on to the production of frightful deformity or death.‡‡

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\* Forest. Obs. Ch. lib. ii. obs. ix., he first gave the complaint the name "noli me tangere," and it is at once demonstrative of the indomitable character of the complaint, and ignorance as to its nature.

† Dublin Hospital Reports, vol. iv. p. 282.

‡ Observations on local Diseases termed Malignant. By B. Travers, F. R. S. &c., &c., Part I. p. 235.

§ Treatise of Diseases of the Eye. Art. Cancer.

|| A Treatise on the Structural Characteristics of Cancer, and of those morbid Growths which may be confounded with it. By T. Muller, M. D., P. S.

¶ Makenzie on Diseases of the Eye, 3rd ed. p. 134.

\*\* According to Sir A. Cooper, it is an ulceration of the cutaneous follicles.

†† A Treatise on Diseases of the Skin. By P. Rayer, M.D., p. 672.

‡‡ Makenzie says, "we are now at no loss in distinguishing cancer from span-

The more than ordinary success which attended a line of practice, in some respects new, adopted by me in the treatment of the diseases here referred to, may not be devoid of interest nor it is hoped, of use.

The parts most liable to such attacks of ulceration are the nose, eyelids, and cheeks, partly much in the order in which I have mentioned them ; the tubercle or encephaloid cancer more frequently falling upon the under lip, cheek, or scalp ; the caruncula lachrymalis and globe of the eye are also frequently the seat of this form of cancer. It may not be unimportant here to remark the predilection which diseases of this class have for the outlets of the body, or their immediate neighbourhood ; so much so indeed, the fact of suspicious ulcers being found in those localities, stamps upon them the character of intractability, if not malignancy. It is admitted, however, that cancer of the face is a much less serious affection than cancer of the glands ; when extirpated the disease is also less apt to recur, hence it would seem to maintain its local character longer than the same disease does elsewhere.

When those diseases exist in a situation which admits of extirpation, the sooner it is done the better, and it can be effected best by the knife ; this mode of cure, however, either will not be submitted to, or is inadmissible in a great majority of such cases when advice is sought for, and then our only remaining alternative is local and constitutional treatment.

Many different medicines of various degrees of activity have in their turn been spoken of as calculated to heal up cancerous ulcers ; conium alone, of all the remedies proposed for internal use, seems to exert any good effect. Rayer\* thus expresses himself on the subject : " I have also tried the preparations of

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goid tumour, and spangoid tumour from melanosis, but with regard to the malignant ulcerations which attack different parts of the skin, and especially the skin of the face, there still exists a considerable degree of confusion." Op. cit. p. 137.

\* Op. cit.

hemlock, which have been lauded in this class of complaints, in doses of from one to two grains, for a year, in several cases of cancer of the skin and mammary glands, and under the influence of this medicine, appeared to me to advance more slowly than usual, and to be attended with less severe pain." Dr. Copland\* also speaks favourably of this remedy: "I believe," he says, "when this medicine is cautiously employed, both internally and externally, in conjunction with narcotics and alkalies, or otherwise judiciously combined, Mr. Hall's opinion in its favour is not much too highly coloured.† The iod. of arsenic is favourably spoken of. Rust assures us that he has succeeded in curing radically several cancerous affections of the lips with the decoction of Zittmann.‡ Graffe§ has given a case of very extensive cancer of the face and palate, which was much improved by creasote. Mr. Sesar Hawkins|| proposes the chlorate of zinc.

Chlorate of zinc has been of late years introduced to the notice of practitioners by M. Concoin; has been favourably spoken of by Mr. A. Ure¶ and Mr. Laurence;\*\* the latter gentleman tells us that it was successful in curing two cases of cancerous ulceration of the face, where the disease, though of long standing, was superficial, and the cures have been permanent. The chlorate of gold appears to have produced marvellous effects in the hands of Racamier.†† The acid nitrate of mercury, made by dissolving one part of proto-nitrate of mercury in eight of nitric acid, is a favourite escarotic in the French

\* Copland's Med. Dictionary, p. 287.

† Mr. Hall also advocates the use of arsenic in conjunction with conium (Edin. Med. and Surg. Journal, vol. vi. p. 58.)

‡ A compound decoction of sarsaparilla. These cases, Rayer properly remarks, were probably syphilitic.

§ Med. Gazette, 1836, vol. xviii. p. 287.

|| Lancet, vol. ii. 1836, p. 252.

¶ Op. cit.

\*\* Crosse in Transactions of Provin. Assoc., vol. v. p. 61.

†† Cyclopædia of Practical Surgery, p. 641.

hospitals; also the animal oil of dippel, butter of antimony, &c. It must be confessed, however, with Dr. Jacob, that "there is perhaps, not an article used in medicine which has not been employed in those cases with little or no benefit; so much so, it has been proposed to leave them without any other dressing than a piece of rag, and that such are found to be slower in their progress than others which have had all the resources of surgery exhausted upon them."\*

Edward Conway, æt. 40, dark hair and complexion, middle height and stout make, first applied to me May 1st, 1838.

Six years previously, a small dark-coloured scab or pimple as he called it, first appeared upon his right under eyelid, near the external or temporal commissure; this was quickly succeeded by an ulcer, giving a painful sense of heat and itchiness, but without any scab or elevated appearance near or upon its borders; the ulcer discharged thin glutinous matter, and gradually extended itself in the direction of the internal canthus of the eye. The report taken at this time runs thus: a superficial ulcer not apparently deeper than the cutis vera, occupies upwards of two-thirds of the right under eyelid; extending from near the outer commissure involving along the tarsal border, which latter, with the cilia, are removed for the extent above-named, leaving the globe of the eye and its conjunctiva exposed; the latter is thickened and drawn inwards; the inferior margin of the ulcer is irregular, not materially thickened nor everted, but excavated, presenting pretty much the appearance of herpes rodens; the surface of the ulcer is pencilled over with a thin pale gelatinous matter, which, though soft, is not easily removed. He prosecutes his usual avocations, that of a land steward, without great inconvenience; the unpleasant symptoms above referred to seldom amount to

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\* Op. cit. This opinion must be considered as going a little too far, it will, however, mark the comparative insufficiency of every remedy hitherto proposed in such cases.

absolute pain, either in the sore or his head ; the latter, however, is not always exempt from pain, and that too of a lancinating kind ; all these symptoms have grown in frequency and intensity in an exact ratio with the ulcer. His general aspect, whether from apprehension or pain, is indicative of disorder, his person having lost its wonted plumpness, elasticity, and vigour ; his spirits are depressed, and he enters upon his ordinary avocations with distaste and apathy. No physical disease, however, nor appreciable functional disturbance, is marked, beyond what has been mentioned.

The entire surface of the ulcer is touched with the chlorate of zinc, in its solid form, and whilst deliquescing ; immediately afterwards the part is fomented with tepid water for an hour, when the ulcer is ordered to be covered with simple cerate and a pledget of dry lint. The fomentation is ordered to be repeated three times daily.

Hab. Ext. Conii gr. i.

Bi-Carb. Sodæ gr. v. bis in die.

Middle diet with soup.

4th. The ulcer is little changed in its general aspect, but the sensations of heat, pain, &c., peculiar to the affection, have, in some measure, subsided, his own expression is, the part feels "lighter and more natural." The pain experienced from the remedy he describes as excessive, and says the heat, redness, &c., of the skin excited thereby, lasted for two days. The great pain subsided in about ten hours.

Let the chlorate of zinc be again applied as before, confining its application to the margins, especially where excavated, and the foul parts at the bottom of the ulcer.

8th. The aspect of the ulcer, together with his own sensations, are distinctly improved ; the ulcer looks cleaner, presenting florid, healthful patches of granulations, which seem disposed to fill up the chasm ; the sensations above-named as characteristic of the complaint, have subsided in a marked manner, and

there is a corresponding buoyancy of spirit, inspiring hope and confidence.

The remedy is ordered to be applied about every third day, to those parts only presenting a foul or unhealthy appearance, and never until the heat and redness consequent upon the preceding application of the remedy had gone off.

One month from the date of his admission the complete cicatrization of the ulcer took place. The zinc has been applied ten times ; each succeeding application, being more circumscribed and limited in extent than the preceding, was followed by less pain, redness, &c. On no occasion was it necessary to use any remedy, beyond simple fomentation, to subdue the inflammatory action arising from the use of the remedy.

A short time afterwards this man died of a pulmonary affection, supposed to be phthisis.

CASE II.—A. C., æt. 49 years, light hair and complexion, but possessing a stout though spare constitution ; three years previously, first felt an itchiness, accompanied with a small brown coloured pimple upon his right malar bone, near its orbital process, and towards the external canthus of the eye ; the scab or pimple, when rubbed off, as it soon was, disclosed an ulcer, in all respects having the character of the preceding case ; the attendant symptoms too were strictly analogous. The progress of the ulcer, however, was not so rapid ; at the time of admission it had acquired the size of a fourpenny-piece only, extending across the eyelid towards its tarsal border, which, for a short space, is occupied.

The chlorate of zinc was applied as in the former case, the first application of the remedy having changed the aspect of the ulcer, and lessened, in a great degree, the peculiar “ hot, painful itchiness,” as he expressed it, of the part.

In three weeks the ulcer had lost all those sensations peculiar to such sores ; its surface was clear, presenting healthy granulations, which were rapidly advancing into cicatrization from every point of its circumference. In six weeks the ulcer was

closed to a small spot, about one-eighth of an inch in diameter. As this period he left this country for America, and I heard nothing more of him until about two months ago, when his friends assured me he was perfectly well; the ulcer having healed shortly after he left Ireland, has never since given him any trouble.

CASE III.—John Nevin, labourer, æt. 55 years; spare habit, but healthy, except a chronic catarrh, which he has had for the last two or three years, was admitted into this County Infirmary, September 1, 1840. He gave the following account of the origin and progress of his complaint: A small, dark-brown coloured pimple or scab first came upon his right cheek, over the edge of the malar bone, bordering the eyelid, immediately beneath the external canthus of the eye; this was extremely itchy, was frequently rubbed off, drying up each time, after a slight discharge of a thin, reddish, watery fluid; this state of the sore continued for about three years. Ten years previous to admission an ulcer formed in the part, and quickly acquired the magnitude of a fourpenny-piece, healing and breaking out from time to time for the following five or six years; on some occasions the part would remain healed for several months at a time, but he remarked that the ulcer always acquired additional size every time it occurred, and quickly spread to the size it was destined to maintain; the sensations he experienced were a burning heat and pain; these sensations were never present at the same time; the pain, when present, was always relieved by the discharge, which seemed to flow at intervals with great freedom, and is still reported to be of the thin, red, watery kind. The ulcer increased much in size the last four years.

The report on his admission runs thus: An irregular ulcer occupies the right under eyelid, the entire of which, together with the soft parts, for the extent of a quarter of an inch below the level of the bony margin of this point of the orbit, is removed, leaving exposed the globe of the eye covered by its conjunctivæ, thickened apparently from exposure only over the en-

tire aspect of the denuded eyeball. The eye itself is perfectly healthy, and his sight remarkably acute; the left eye was lost several years ago from an aneurosis. The ulcer occupies about the size of a shilling over the malar bone, where it is said to have commenced, and the bone is denuded, and in a state of exfoliation in that part; its edges are irregular, serrated, or indented, not thickened, presenting the appearance of herpes rodens. The entire surface of the ulcer is covered, in some places more than in others, with a pale, ash-coloured, thin, but glutinous matter, which adheres with tenacity to the surface of the ulcer. His general health is evidently impaired; his aspect, which is reported to have been naturally thin, is now remarkably so; is tinged with a chronic catarrh, and occasional pains in his abdomen, of the character of colica. The secretions from his bowels and kidneys are natural. Pulse feeble, but moderate and regular. His nights are disturbed by the sensations already described, and which of late have become more constant and severe, especially the shooting pains through his eye and temple.

Ordered a spirituous evaporating lotion, with ext. hyoscyam. to his forehead and temples; occasional sedatives at bed-time, and generous diet. The entire surface of the ulcer was touched with the solid chlorate of zinc in a state of deliquescence; shortly afterwards the part was fomented for one hour with tepid water, and subsequently dressed with dry lint covered with common cerate. The pain occasioned by this application of the chlorate of zinc was excruciating, persisted for about eight hours, and was succeeded by heat and redness of the surrounding cutaneous tissue, which did not entirely disappear before the second day, at which time the remedy was again applied, and was followed by a like pain and suffused redness of the neighbouring parts, but neither of those symptoms was reported to be so severe as on the first occasion of using it. Some improvement is observed in the ulcer, a few islands of florid granulations appear in two or three points, and the whitish discharge

appeared lessened in quantity, and was chiefly to be found in the deepest parts of the ulcer, about its centre, and excavated edges. He also thinks the pain already described has lessened in intensity, and the sedative draughts are not so often used at bed-time.

The chlorate was again applied to those foul parts of the ulcer, and was followed by pain and redness as before, but to a lesser extent. On the eighth day, ten days from the date of his admission, a third of the ulcer was clean, presenting elevated points of red, healthy granulations. He now expresses himself as decidedly better; points with accuracy to the foul parts of the ulcer as alone possessing the "hot pain" peculiar to the complaint, and unlike any pain he had ever felt; these sensations, he said, lessened in an exact ratio with the cleansing of the ulcer.

On the twentieth day the entire surface of the ulcer was clean, except two small patches, where, as before, he says the peculiar sensation is only to be felt; healthy granulations appear filling up the ulcer, which is lessened in size, several points of cicatrization having formed upon its border, which, with one or two exceptions, is no longer foul and excavated.

On the thirtieth day the wound was not one-half its original size, is perfectly clean, the chlorate having been applied but twice since last report.

On the fiftieth day the ulcer was perfectly healed, except one small patch over the malar bone, where the complaint first originated, and here the irritation of a denuded bit of bone seemed to be the exciting cause. All feelings of pain, heat, &c., now vanished; his rest is restored, and except his cough, and an occasional return of the pain in his stomach, he is in perfect good health and spirits.

At this period he was seen by several medical friends; in Dublin it is only necessary to mention Dr. Colles and Mr. R. Adams. The former gentleman saw him in hospital a short time previous to his putting himself under my care, and although

various remedies were used, he left Dublin as he had other places, without the least improvement in his symptoms.

Since the period above-named a small piece of bone came away, and the ulcer speedily healed, and continued so for thirteen months, when he was seized with fever. During his convalescence, and while yet extremely feeble, the complaint relapsed, commencing, as at first, over the malar bone; the cicatrix upon the eyelid too opened, and there appeared upon his cheek, extending towards his nose, a thin dry brown crust or scab, without ulceration, but possessing the peculiar "hot pain," already described as characteristic of the complaint. The ulcer over the malar bone is in many respects different from the former attack in the same place; for example, it is now perfectly circular, about the size of a halfpenny, fully half an inch deep, especially towards the orbit, which it involves at the external canthus. He is again subjected to the use of the chlorate of zinc, together with the internal use of conium and the alkalies. The ulcers have assumed a healthy appearance, but more tardily than at first. The issue I shall communicate, God willing, at a future period.

In all the cases, eight in number, which have fallen under my observation, the affection was from the commencement attended with a constant peculiar sensation, as if the parts were consuming under its influence; and although this early symptom was not sufficient materially to embitter life, it was always of such a nature as to produce feelings of discomfort; and in every instance, when the ulceration had acquired the magnitude of a shilling in circumference, pains, more or less intense, were periodically present; and about this period the mucous surfaces of the stomach or bronchus, or both, were sympathetically affected. It is also worthy of remark, that in every such case, where the constitutional disturbance already referred to occurred, the subject of it had acquired an age ranging from thirty to sixty years.

I have a distinct recollection, but no notes of a case of this

kind, of upwards of twenty years' duration, where I endeavoured, but in vain, to form a new surface by excising the disease. The ulcer, in this instance, spread to both eyelids, which were ultimately removed, thereby finding its way nearly to the bottom of the orbit, especially at its inferior aspect, and ending in death; yet the ball of the eye, thus, as it were, dissected from the surrounding tissues, retained its tunics and its functions perfectly intact. A short time previous to this man's death, the chlorate of zinc was applied to the ulcerations, and for a time hopes were entertained that a cure would be effected, but the complaint had obtained a rootedness in the part, if not in the system, beyond the power of the remedy to remove. The ulcers, which had partly cicatrized under its use, again opened, and, as already stated, caused his death.

The rapidity with which the aspect of those ulcerations was improved under the use of the chlorate of zinc, as above directed, is at once a proof of the superior efficacy of the remedy, and also the local character of the affection up to a certain period: what that period is, when all known remedies are useless, remains to be ascertained. The last case I have stated had, no doubt, long lapsed into an irremediable state of malignancy; that of Nevin (Case III.) will probably serve to illustrate the first stages of that important period.

Those who have hitherto proposed the use of the chlorate of zinc, in cases like the above, advised it to be used in solution, or in various proportions combined, in the form of paste, with lime, flour, or some such substance. The obvious advantages of my mode of applying the remedy are—1st, it is at once, and in the full enjoyment of its escarotic powers, brought in immediate contact with the diseased surface; 2ndly, its reapplication is regulated by existing circumstances; and, 3rdly, no parts are subjected to its use, but those which seem to require it.

I have, on several occasions, removed wartlike excrescences of suspicious character from various parts of the face by chlorate of zinc. The following will afford a good example:

A gentleman, aged sixty years, had upon his under lip an elevated wart, with hardened base, accompanied with lancinating pains, and the ordinary indications of a malignant tumour. I advised the immediate excision of the part, but he refused to comply, and requested I would first try the effects of some application to the part. The chlorate of zinc was used, as already directed, and its reapplication ordered as soon as the tenderness and suffusion consequent upon each application of the remedy went off: if no good effect was produced at the end of twelve or fourteen days, he consented to have the part excised. The zinc was applied four times within the period above named, when I went to his house prepared to perform the operation of excision, but the tumour had reduced in size fully one-half, and had lost its characteristic pain, &c. Under these circumstances, I readily acceded to his request to wait another fortnight, at the expiration of which time the disease had totally disappeared, leaving a slight induration of the common integument, which a few applications of the remedy entirely removed.

Some precaution is necessary in the application of this powerful escarotic to the skin of the head and face; e. g. in young subjects the chlorate should be diluted by the admixture of from three to ten parts of water, and the pain, redness, &c., consequent on one application, should always be allowed to subside before it be reapplied, else a slough of the part will probably follow. This I have observed when using it with children and young persons affected with pitzriasis, porrigo, psoriasis, and tinea capitis.\* The same precaution is not necessary to the same extent with persons advanced in life; and this is strikingly exemplified in a case of chronic tinea capitis (eczima rubrum and impitiginodes) occurring in the scalp of a man, thirty years of age. Some good effect was produced in this instance by the repeated application of the chlorate; at first in solution, and

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\* The beneficial effects of this remedy in the treatment of these affections has been so signally beneficial, I purpose making it the subject of a separate Essay.

subsequently in its pure uncombined form. Not feeling satisfied, however, at the slowness of the cure, this reckless spirit got possession of the bottle in which the chlorate of zinc was kept, and of his own accord, and without instructions, rubbed, as he confesses, the undiluted chlorate into the affected parts, persisting in the friction for half an hour at a time. The only effect produced in this instance was considerable pain and redness in the part, which lasted in general for two or three days. The disorder, however, disappeared under its use ; and his head, which on admission had not a hair upon it, is now *thinly* covered with long hair. There has been no relapse for six months.

LUPUS.—(*Herpes exidens*.—*Dartne, Fougeant, Alibert.*)

Lupus, in the ordinary acceptation of the term, includes a group of affections, which, for the most part, fall upon the young ;\* is frequently combined with other complaints and disordered conditions of the system, such as scrofula, syphilis, herpes, chlorosis, anemia, from various causes, &c. ; often continues for years, committing the most frightful ravages, without the general health appearing to suffer in any degree ; yet, as Rayer† says, “ when not only the skin, but the cartilage of the nose is rapidly destroyed, some patients show unequivocal symptoms of chronic inflammation of the lining membrane of the stomach ; intestines, or bronchi ; and several even sink under a species of slow fever, accompanied with colliquative diarrhœa.”

The complications here alluded to imply an endless variety in the characters, and point to an equally extended variety in the mode of treatment proper in such cases ; my meaning will be best illustrated by referring to the following cases.

*Scrofulous Lupus*.—(*Exidens*).

Under this head may be comprised two varieties, viz., with

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\* Rayer, p. 678, says, “ It is most generally developed between the sixteenth and twenty-fifth year.”

† Op. cit. p. 674.

destructive ulceration (*lupus exidens*), and with incrustations only (*lupus non exidens*).

CASE I.—J. Lee, æt. 11 years ; a wretched, poor boy, of diminutive stature for his age ; born of scrofulous parents, and destitute of the requisite means of support, was admitted into hospital under the following circumstances :—About a year previously light, brown-coloured incrustations, attended with considerable pain, formed upon his right ala nasi and under lip, gradually spreading towards his cheeks, eyelids, and forehead. A portion (about one-third) of his upper lip has been removed by ulceration ; the ala and septum nasi suffered in like manner, allowing his nose to fall inwards ; the integuments upon his cheeks and eyelids are in several places soft, puffy, and elevated, containing, beneath some imperfectly formed scabs, similar to those already described, several points of ulceration, from which issued thin, ill-conditioned pus and ichor ; there is but little loss of substance, however, in those parts, but there is one deep ulcer covered in part with a crust, somewhat darker coloured than those already described, occupying a space in extent equal to a copper halfpenny, situated between the supercilia. A great variety of local remedies has been tried ineffectually in this case. A solution of *argent. nitrati* gr. x. to the ounce of water, was ordered to be applied daily to the ulcers and incrustations, a plain tepid water douche to be used frequently, four or five times during each twenty-four hours ; *tinct. ferri acet.* ʒiii. ter in die, with full diet.

A fortnight after admission, several of the scabs had fallen off, the general tumefaction and deformity of his face seemed lessened. A solution of chlorate of lime, one part to four of water, was ordered in place of the nitrate of silver, the latter not producing any sense of pain, as it did when first used.

One month after his admission there was an evident improvement, not alone in the characters of the ulcerations, &c., but also in his general health.

No material change was made in the treatment, except some

variation in his tonic medicine, and the substitution of a solution of the chlorate of zinc, one part to four of water, as a daily lotion, which was borne without exciting undue pain or inflammation.

Two months after admission the ulcers had healed ; some thin scaly matter still remained about the original sores, the integument was still thickened, especially over his cheeks, eyelids, and forehead. He was at this time discharged and ordered to the sea side.

CASE II.—*Lupus non exidens.*—*Serpiginosus.*

A. B., a gentleman, æt. 22 years, of delicate make, and apparently of a strumous diathesis, put himself under my care in the month of May, 1840. Three months previously he first felt the point or tip of his nose feel extremely hot and itchy, and soon after an elevated pimple (tubercle) appeared upon the right ala nasi, near his cheek, this was soon followed by several others, forming an irregular cluster of a purpleish colour, not much elevated above the level of the skin. Fresh tubercles soon after sprang up in the neighbourhood of those, and thus the disease spread rapidly over the greater part of both his cheeks, nose, and forehead. A thin, inchorous discharge is given out from the borders or circumference of those patches, and in several places the thin, light-coloured incrustations with which those parts are imperfectly covered seem perforated with small holes, giving exit to a like discharge. He laboured under no constitutional disturbance ; his tongue, however, is white, and his bowels costive.

A simple tepid water douche is ordered to the affected parts three times daily, and once a day, a wash composed of sulphur boiled in lime water was used, brisk cathartic medicines were ordered, and he was put upon farinaceous diet.

Ten days afterwards his tongue had improved, his bowels having been well acted upon, the tubercular affection was stationary, except the skin of the affected parts, which previously

bore a thickened, rugose appearance, now seemed softer and more natural. The ioduret. ferri with gentian and camphor were ordered twice a day ; the local applications were continued as at last report ; ordered to have animal food once a day, but no wine.

About the middle of June several of the squamæ had separated, and were not re-produced. A slight declension could be observed in the size of the tubercles, having shrunk nearly to the level of the surrounding skin ; their colour too was less deep.

From this period he gradually progressed to a perfect recovery, which event was accomplished about the end of July, three months from the period of his having first submitted to treatment. The last three weeks were spent at Bagnères de Bigorre ; the douches and baths of the Dauphin belonging to the Thermes de Maria Therese were the springs which he used, and from which he seemed to derive benefit.

*Lupus in a Chlorotic Subject.*

A young lady, eighteen years of age, with dark hair, skin, and complexion, enjoyed good health up to about the 1st of July, 1841, at which period, owing, it is thought, to a domestic affliction, the catamenia became irregular, and when present, scanty in quantity. Her appetite and strength also declined, and her general appearance is anemic. About one year previous to the derangement of health here described, she perceived a slight sore accompanied with itchiness of the inside of her nose ; about this time a scab formed in the inside of the right nostril ; this scab always returned, when the patient picked it off with her nail. The parts then became chopped, poured out a thin sanies, which excoriated her lip over which it passed.

Various remedies were used, but with no good effect ; indeed the disorder appeared to get worse, for at the time of my first seeing her, a small ulcer, partly concealed by a light-coloured brown scab, appeared at the tip of her nose, extending apparently from within outwards.

The Iod. ferri in two-grain doses, combined with tincture of cinchona and camphor, was ordered to be taken twice daily. The affected part was washed once a day with a solution of chlorate of zinc, in the proportion of one part of the chlorate to four of water, the plain warm water douche was also ordered to be used frequently every day. She was to have aloetic purges, and a few (four or five) leeches to the vulvæ, when the period of each return of the catamenia arrived; warmth to her legs, with generous diet, and carriage exercise in the open air, composed the entire of the treatment at this period.

On the first of August, some improvement had taken place in her appearance, her appetite too had improved, but the complaint in her nose seemed to have undergone but little alteration; the discharge, perhaps, was less abundant, and the little ulcer had not increased in size. No alteration was made in the general treatment, but for the chlorate of zinc was now substituted a wash composed of the liquor hydriodatis arsenici et hydrargyri, combined with an equal proportion of water. September the first, two months from the commencement of the above line of treatment, the improvement was strikingly apparent. The ulcer had healed, the discharge from the nostril lessened more than one-half, and her colour and strength were visibly restored.

The above line of treatment was persevered in for about two months longer; she was ordered to spend some time on the Continent, and if possible to visit Aix la Chapelle.

Six months from the date of her first application to me she was perfectly restored, and has continued ever since in the enjoyment of good health.

#### *Lupus—Anemic.*

Mrs. B., æt. 26 years; a lady of delicate constitution; the mother of six children, four of whom she nursed; first (April 1, 1836) perceived a pimple high up in her left nostril: her attention was not much directed to it for about three weeks,

during which time, however, the little scab, which was frequently removed by picking it with her nail, or blowing her nose, spread over a considerable surface, but still occupied the upper parts of the Schneiderian membrane. About this period the right nostril became similarly affected, and now a discharge, resembling gum, of a light amber colour, was observed to issue from the part first affected every time the scab was removed. The lady herself compared this discharge to melted white sugar, or the gummy exudation of a cherry-tree, and, like the latter, it in a few minutes became concrete, forming a crust or scab upon any part, as the lip, where it accidentally fell: on its removal the part always felt sore.

Six weeks from the commencement both nostrils were fully occupied by the disease; the discharge increased in an equal ratio, and seemed to be more acrid than formerly. A small ulcer had now formed upon the tip of the nose in a fissure leading from within outwards, between the right ala and septum nasi.

Caustics, escarotics, and ointment of various kinds were applied to the affected parts; her general health was attended to, and suitable tonic medicines, food, air, &c. prescribed. The complaint, however, continued unabated; and at this period (two months from the commencement) of the attack, it was resolved to lay by all local treatment, except the simple tepid water douche, from which she experienced so much relief: it was persisted in for several hours daily for about one month longer, at the end of which time the ulcer had healed, the incrustations and discharge had gone off, and thus, under the use of the douche alone, combined with a suitable tonic plan of treatment, this lady was perfectly restored, and has continued well up to the present time.

#### *Lupus—Syphilitic.*

The appearances presented by secondary syphilis, when it attacks the head, face, or fauces, have been so well described and figured in several systematic works, it would be superfluous

to dwell upon them in this place. Rayer thus describes this affection : "On the hairy scalp, the flattened syphilitic tubercle appears under the form of spots of a reddish yellow colour, nearly the size of a silver threepence, and covered with minute yellowish, and occasionally greenish squamæ. They are produced, like syphilitic lepra, by a positive increase in the thickness of the skin." And again (p. 815), "Tubercles, of the description that engage us, are often evolved on the alæ of the nose, and end in phagedenic ulcers, which occasionally destroy no more than the skin : these sores are followed by deeply depressed creatrices. When both of the alæ nasi are implicated at once, or when an erysipelatous inflammation of bad character takes possession of those parts, they are apt to be completely destroyed by the ulcerative processes, the energy and rapidity of which can then only be compared to what is observed in certain cases of lupus."\*

A careful examination of those affections, coupled with the history of the case, will always enable the intelligent practitioner to arrive at a correct diagnosis.

The cases here given point to some of the most simple forms of lupus, and the affections with which it is usually found combined ; it will be obvious that admitting the combinations here referred to as alone possessing a modifying influence on the disease, it may appear under an endless variety in degree only ; and it will be equally apparent, that in order to be successful, the curative indications must undergo a corresponding variation. Those observations apply chiefly to the constitutional treatment. Having tried a great variety of local remedies, I am of opinion that a few only deserve attention : as the most valuable, I would mention the simple and medicated douche, which, as I have shown in the case of Mrs. B., was alone sufficient to effect a cure. The chlorate of zinc, and liquor hydriodatis arsenici et hydrargyri, the latter a remedy lately proposed

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\* Op. cit. Article, Syphilida, p. 813.

by Mr. Donovan,\* and which I have found most useful in that form of lupus commencing on the inside of the nose. There are now leaving the infirmary, cured, two cases of scrofulous lupus (lupus vorax), commencing upon the outside of the nose, and which previous to admission had effected the destruction of a great portion of the alæ and septum nasi, where the only local remedy used, in addition to the simple water douche, was the chlorate of zinc. Ointments of every kind seem inadmissible in such cases.

The following inferences seem deducible from the foregoing facts :

1st. Malignant ulcer of the eyelid is, in its earlier stages, up to a period not yet defined, local, and admits of cure by local treatment only.†

2ndly. That it is usually a disease of advanced life, but is not confined to any temperament nor condition of life.

3rdly. This malady is rarely found combined or co-existent with other affections ; on the contrary, its presence seems to exempt from any such liability. The sympathetic affection of the stomach, bowels, and bronchi, already referred to, forms an exception to this rule.

4thly. Lupus, on the contrary, seems, in most instances, to have a constitutional origin, being, as already shown, found to follow from, or co-exist with, other affections, or disordered conditions of the system ; moreover, it is most effectually checked by constitutional, combined with local treatment.

5thly. The difference, though well marked in several instances, between these two affections, is infinitely less apparent than between either of them and cancer.

6thly. The term "malignant" may be fairly questioned as being applicable to the earlier stages of ulcer of the eyelids ; but

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\* See Dublin Journal of Medical Science, September, 1840, p. 97.

† The healing of the ulcers was so rapid in those cases where constitutional treatment was used, that no part of the cure could be attributed to it.

it is absurd and inappropriate in the great majority, at least, of cases of lupus.\*

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\* Contrasting those affections with cancer, there is scarcely a point of resemblance between them ; where, for instance, are the two never-failing symptoms of Paul of Ægina, "*ægros maxime fatigans et perpetuo fere dolore affligens ?*" Where is the contamination of the glandular system years after those affections have remained in a state of widely extended ulceration ? And where are the examples of open cancer being cured by treatment such as was successful in the cases here recorded ?

## BIBLIOGRAPHIC NOTICES.

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*Lectures on the Diseases of the Urinary Organs.* By SIR B. C. BRODIE, Bart., F. R. S. Third Edition, 8vo. pp. 379.

*On the comparative Advantages of Lithotomy and Lithotrity.* By EDWIN LEE, M. R. L. S. Pamphlet.

TEN years have elapsed since the first appearance of Sir B. Brodie's work, and as the medical public have sufficiently expressed their sense of its value by calling for several editions, our praise could add little to its credit, or to the character of its author. There are many topics in the lectures that we should have wished to linger on, and bring before the reader's notice, but we prefer confining our attention to the 15th lecture, because the matter is nearly quite new, and because it contains Sir Benjamin's matured opinions on the operation of lithotrity, the introduction of which is still so recent, that the opinion of a surgeon so eminent, so experienced, and so honest, as Sir Benjamin Brodie, on its merits, and the peculiar cases suited for it, is particularly valuable.

For a time after the first invention of lithotrity, it was confined to persons who nearly exclusively devoted themselves to its performance, whose interest it was, therefore, to cry it up, and who, we regret to say, seem to have stopped at no means, however unworthy, to put it forth as superior to all other ways of relieving the stone; who as carefully concealed the reverses as they ostentatiously paraded the successes of their operations. From this class of men nothing could be expected, and no reliance could be reposed on their interested reports. It is painful to an honest mind to read the enormous falsehoods detected in Civiale's account of his operations. Mr. Willis, in his work on the treatment of stone in the bladder, says:

"In his *Traité de l'Affection Calculeuse*, p. 613, Civiale speaks of the number of persons affected with calculus, who had sought his assistance up to the year 1836; they amounted to 506. Of these 199 were either unfit subjects for lithotrity, or were otherwise prevented from submitting to the operation.

Supposing the whole of the 199 to be unfit, this would be in the proportion of one in two and a half very nearly, to whom lithotrity held out no chance of relief, or who, were they subjected to the operation, would almost certainly lose their lives. We have, therefore, 307 subjects favourable for the operation. Of these, says M. Civiale, 296 were completely cured; 7 died; 3 were only partially relieved; and in one the issue is not known. But when we turn to such public documents as we possess, we are amazed to find how little the conclusions, as there stated, accord with the numbers of M. Civiale. In a report presented by Barons Larrey and Boyer to the Royal Academy of Sciences, in the month of April, 1831, upon a *compte-rendue* or statement in regard to the patients affected with calculus confided to the care of M. Civiale, at the Hospital Necker, we find it stated, with something like a censure, that M. Civiale should have confined himself to the mention of five cases in which he had recurred to lithotrity with a success more or less decided, but passed by in silence the patients who underwent the operation of lithotomy (after having been vainly essayed by lithotrity), so that, say the reporters, 'we should have remained in complete ignorance of the fate of these individuals, had we not seen the *movement* of the hospital, which Monsieur, the Controller, was obliging enough to lay before us.' 'We find,' continue the reporters, 'that twenty-four patients (not sixteen, as stated in M. Civiale's *compte-rendue*) had undergone the operation of lithotrity or lithotomy. Of these twenty-four patients, of whom six were cut (after lithotrity had been essayed in vain) eleven died more or less immediately after the operation.' Eleven deaths in twenty-four cases immediately after the operation."

In short, according to M. Civiale, only one in more than forty operations died, whereas in reality, according to the reporters' statements, of twenty-four of his cases which came under their notice, nearly one in two died.

And in a letter by Velpeau to the Editor of the *Gazette Medicale*, is the following statement:

"In 1827 M. Civiale had treated 83 calculous patients. *One only*, he said, had died from lithotrity. It is, however, true that on a closer inspection it is easy to see that 39 of these patients had died before having been completely cured, and that in this number I could count *twenty-nine*, who underwent the operation or the explorations of lithotrity. This is a fact which I pledge myself to bring to light if M. Civiale requires it. Was I so wrong, therefore, after that, I who wished to see both sides of the picture, not to receive the accounts of Messieurs the

lithotriters unless they should relate all the facts without exception and with all the suitable details."

To judge of the value of the operation from interested and unprincipled individuals like M. Civiale is, therefore, out of the question. Even supposing the record of the operations to be true, still the conclusions to be drawn from the early cases are comparatively valueless. The operation was then differently performed; the instrument invented by Civiale or Le Roy, three-branched and straight, was very objectionable; with it the seizure of the stone, without more or less injury to the bladder, was difficult, the branches, from their being necessarily slight enough to be elastic, were often broken; the straightness of the instrument also caused violence to the urethra, which was put on the stretch. The consequence of all these was, that the operation was frequently unsuccessful or fatal. Much change for the better has resulted since the use of Heurte-loup's or Weiss's two-branch instrument, particularly with the improvement effected in it by the long opening in the female branch to let through the detritus. The history of this important alteration in the instrument is not generally known, and is as follows:

In some of his earlier operations, Sir Philip Crampton experienced the serious inconvenience resulting from the detritus so blocking up the hollow of the instrument as to cause considerable difficulty in withdrawing the lithotriteur, thus adding greatly to the anxiety of the operation and to the suffering of the patient. Sir Philip conceived that two holes in the end of the female branch would partly obviate this defect, and expressed this opinion to the late Mr. Oldham of the Bank of Ireland, with whom at the time he consulted much on the subject of making improvements in the lithotrity instruments. Mr. Oldham, with that mechanical genius for which he was so remarkable, at once suggested the alteration as it is at present made, viz., a single longitudinal opening in the fixed blade, so long as to occupy the whole of the upright part of the beak, and admitting the end of the moveable branch armed with wedge shape teeth. A construction admirably adapted to break the fragments small, and to let them readily through, without weakening the instrument. He had a most beautiful instrument of this kind constructed in the workshop of the Bank of Ireland, which Sir Philip has in his possession.

Since, moreover, the operation has fallen into the hands of regular surgeons, the success has been infinitely greater. Since lithotrity has been undertaken by them the cases best adapted for it have been selected with care; in the beginning, on the contrary, many cases were operated on which would now be let alone, or

treated by lithotomy. To judge, therefore, of the merits of lithotripsy, by a consideration of the early cases, would give a very erroneous estimate of its value, and we think that Mr. Willis (evidently an inexperienced practitioner in this department) is on this account quite wrong in his estimate of lithotripsy, as he chiefly draws his opinions from the early French operations.

"The value of lithotripsy," he says, "as a general means of treating stone in the bladder, has been immensely overrated, and its indiscriminate application to all kinds of cases has cost many valuable lives. To such an extent, indeed, has this already occurred, that it might be made a question whether M. Civiale's first successes ought not rather to be made subject of regret than of rejoicing, for successes in desperate operations are known to do vast mischief in the end; one is saved, ten perish prematurely in consequence. But lithotripsy, assumed as a general operation, is unquestionably a desperate one; the statistics of the plan prove as much. It has hitherto, however, been a most difficult matter to get at the fact of the advantages or disadvantages of lithotripsy. Operators generally have been excessively chary of saying much upon the subject of the mortality. M. Civiale is in fact probably the only man who has had such ample personal experience of lithotripsy as to be in a condition to speak from a large number of cases upon this point. But it is greatly to be regretted, that little or no credit has been accorded to M. Civiale's reports of his practice."

Now we repeat that Mr. Willis is wrong in calling lithotripsy "a desperate operation;" as performed at first by M. Civiale it was so no doubt, but as at present performed, all practical surgeons who have had opportunities of experience, allow it to be, in very many cases, a most valuable substitute for lithotomy. Except in some particular instances it is also much less painful. We have seen it occasion scarcely more pain than that arising from the simple introduction of the catheter. But let no man persuade himself that it is always an easy operation; no! the more we have seen of lithotripsy the more convinced are we that it is infinitely more difficult, in some cases, than lithotomy; and no one should attempt it who has not familiarized himself with the instruments, and performed the operation frequently on the dead subject. The following is Sir Benjamin Brodie's description of the operation:

"The forceps should never be employed in an empty bladder, nor in one which cannot retain at least six ounces of water without inconvenience."

"The patient should be placed in the recumbent posture, lying on his back, either on a sofa, or on the edge of a bed, with his feet

supported by two chairs. In the former case the surgeon will be on one side, and in the latter he will be immediately in front of the patient. A bolster or thick cushion should be placed under the pelvis so as to keep the neck of the bladder somewhat elevated. A silver catheter is then to be introduced into the bladder, through which, by means of a syringe, such a quantity of tepid water should be injected as can be easily borne. The catheter used for this purpose should be provided with a stopcock, and the extremity of it should not be prolonged a great deal beyond the curvature. It may then be used, not only as a catheter, but also as a sound, for the purpose of exploring the bladder, and ascertaining in what part of the bladder the calculus is, at that time, lodged. This knowledge is always useful, but it is by no means indispensable; and I have often been able to seize a small stone with the forceps which I had not been able to detect by other methods previously. The injection of the bladder having been completed, the catheter is to be withdrawn, and the lithotrity-forceps is to be introduced in its place. In consequence of the peculiar shape of the latter, this is less easily accomplished than the introduction of the catheter. The mere depression of the handle is not always sufficient to make it enter the bladder; and it is often necessary, at the same time, to apply a moderate but steady force during the time that the curved part of the instrument is passing through the neck of the bladder. This is especially the case where the prostate gland is in any degree enlarged. You will know when the instrument has fairly entered the bladder by the facility with which you can move it in any direction, and by your being able to open the blades to any extent without giving the patient pain. You may then explore the bladder with the forceps, and endeavour to ascertain the exact situation of the calculus in it. If it be lying on one side, by opening the blades, and then gently and cautiously turning them towards it, you will probably be enabled to seize it. If you do not succeed by this method, by the following you will rarely fail.

“ Raise the handle of the forceps so as to bring the convexity of the fixed blade in contact with the posterior part of the bladder; then open the moveable blade, at the same time making a moderate pressure downwards in such a manner as to depress the bladder towards the rectum. The instrument being then gently shaken by a lateral motion of the hand, the calculus, in whatever part of the bladder it may be situated, will roll between the blades, and will be seized by closing them. Having been thus carefully secured, by turning the screw it is broken into fragments. The whole of this is a very simple process, requiring but little practice to make you a perfect master of it. When the calculus has been once broken, the fragments are to be seized and crushed in the same manner. They will fall one after another into the grasp of the forceps; and there is no limit to the number that may be crushed at one time, except what is afforded by the diameter of the urethra. Every fragment that is crushed adds to the accumulation of calculous matter; and if the accumulation be very large, it becomes difficult, or impossible, to

withdraw the instrument without injury to the membrane of that canal. The marks on the handle of the instrument inform you of the exact extent to which the blades are separated; and you must use your own discretion, founded on your knowledge of the size of the urethra, as to the point at which you should stop. The forceps first used being then withdrawn, you may use a second, and even a third, in the same manner; and thus you may not only crush a great number of fragments at one operation, but you may remove from the bladder a great deal of what has been crushed.

"I have said that, lest the urethra should be injured in this part of the operation, you are to be careful to withdraw the forceps before the blades are too much separated from each other by the calculous matter collected between them. With the same view you should withdraw it slowly and gently, as it is better that the urethra should be gradually dilated than that it should be forcibly stretched, or bruised, or lacerated.

"The directions which I have just given will apply to all cases in which the calculus is of moderate dimensions. But when you have reason to believe that it is of larger size, it will be more prudent to use, in the first instance, the lithotrixy-forceps, which I have already described as having a longitudinal slit in the fixed blade, and a corresponding wedge-like projection in the moveable blade. I believe that there is scarcely any calculus, however large, which will not yield to the pressure of this instrument. It is true that it will simply break it into fragments, and that none of the latter will be brought away between the blades. But it is required only in the first instance, and the common forceps, which answer both purposes, may be used afterwards.

"When as much has been done as you think can be done with prudence at one operation, the catheter should be again introduced, and the bladder emptied of the water which it contains. Another syringe-full of water may then be injected, which the patient may be left to void by his own efforts, or which may be drawn off by means of a large catheter, with two apertures near the extremity, of sufficient size to allow some of the smaller fragments to escape through them.

"I have heard of a patient being allowed to walk about as usual immediately after the operation. But I am satisfied that this is a most unsafe and imprudent practice, and that it is much wiser to insist on his remaining quiet on a sofa or in bed. It is often prudent to administer a dose of opium afterwards; and at any rate this should always be done when the forceps has had a good deal of calculous matter accumulated in it, so that the urethra must have been forcibly dilated during their extraction. Such forcible dilatation or stretching of the urethra is in the greater number of instances followed by a rigor; and a dose of opium administered after the operation will seldom fail to prevent this ill consequence. An aperient pill, composed of the compound extract of colocynth, combined with the *pilula hydragryi*, may be administered in the evening, with a view to counteract the influence of the opium in stopping the action of the bowels and the secretion of the liver.

"It is necessary that you should watch the patient afterwards, lest he should suffer from retention of urine, produced by the lodgment of some of the remains of the calculus in the urethra, and which might render the introduction of a small catheter necessary. But this is an inconvenience which very rarely occurs, where the patient remains in a state of repose after the operation; and, indeed, it is remarkable, that the fragments left in the bladder often do not seem to find their way into the urethra for the first day or two after the calculus has been crushed. From this period they begin to pass away with the urine; and the patient should be desired to collect and preserve them, in order that you may be enabled to form some kind of opinion as to the bulk of the calculus which has been broken down. For the most part, the escape of the fragments takes place without difficulty, and with little inconvenience to the patient. I never met with but two instances, in my own practice, in which the lodgment of them in the urethra was productive of any real harm, and of these I shall give you an account hereafter.

"When a calculus is of small size, and there is no unusual irritability of the bladder, a single operation is often sufficient for the patient's cure. In less favourable cases it may be necessary to repeat it several times. The intervals between the respective operations must vary according to circumstances; the only rule that can be laid down being, that the operation should never be repeated until the patient has recovered from the effects of what had been done previously, and that it should not be delayed long afterwards."

Mr. Lee, whose little work is an excellent manual of all the facts relating to lithotrity, says that the first sitting is most painful; this is contrary to our experience; we have generally observed, particularly when many sittings are necessary, that each is more painful than the last. The chief accidents after the operation are inflammation of the bladder, of the urethra, hæmorrhage from the urethra, arrest of the fragments, and abscess and retention of urine. Much after-care is requisite, lest any fragments be allowed to remain in the bladder, and the disease be thus allowed to return.

Such is the operation; it now remains to consider the cases for which it appears peculiarly adapted, and those where lithotomy is preferable. "Lithotrity," says Mr. Lee, "may be considered as more especially suited to adults, whose general health is good, and whose urinary organs are free from any other disease than the presence of stone; in whom the bladder is moderately capacious, not preternaturally irritable, and contains a single stone of small size, as not exceeding the size of a filbert, and not excessively hard. A patient in whom these conditions are met with may be regarded as being under the most favourable circumstances for the operation, which in all probability would require but few sittings for its completion,

without the occurrence of any of the more serious accidents which sometimes attend it.

"Adults and elderly people, in other respects in the same conditions as those above specified, but in whom the stone is of larger size, as of a walnut, or from ten to fifteen lines in diameter, may also be considered in a favourable state to undergo lithotrity, though of course less so than when the stone is of smaller size. If, instead of one moderate sized stone, the bladder contain two or three small ones, the patient is not in a more unfavourable state, as he would be no worse than if he originally had a larger stone, which, after a sitting or two of lithotrity, had been broken into as many portions. Even when the bladder contains several stones, lithotrity may still be applied, if there be no other counter-indicating circumstances, and the stones be of small size; though, if there was reason to believe they were numerous, lithotomy would perhaps be the preferable operation, on account of the length of treatment required by lithotrity, and the existence of so many causes of irritation, super-added to that of the frequent introduction and manœuvring of instruments."

A hard stone, if small, is no objection to the operation, but if a hard stone is large, it is one of the most unfavourable cases for lithotrity. A narrow urethra contracted by bad strictures is unfavourable.

Now of the cases unfit for this operation. A contracted and thickened bladder is so, but it is nearly equally as bad for lithotomy. We have also seen a bladder so irritable that lithotrity could not be borne, and lithotomy was successfully performed. A subacute inflammatory state of the bladder is not always contra-indicative of the operation, nay, the operation has been successful where the inflammation is more acute. Mr. Lee mentions the case of a boy operated on by Professor Walthew, in the hospital at Munich. There were symptoms of a high state of inflammation of the bladder, which antiphlogistic measures failed to relieve; the patient being much emaciated and worn out by pain and sleepless nights. After the removal of the stone, which was of small size, the symptoms subsided as if by enchantment. Another state of the bladder, rather objectionable to lithotrity, is a paralytic state, but we trust soon to lay before our readers a description of an instrument invented by Sir Philip Crampton, to assist the bladder in expelling the fragments, in cases where the bladder is unable to do so. We had an opportunity of witnessing a case in which there was enlargement of the prostate gland with retention of urine, necessitating the use of the catheter several times daily, in which this instrument succeeded admirably in assisting the expulsion of the fragments.

Of the cases unfit for lithotrity, Sir B. Brodie says:

"It is due to you, that you should be made acquainted with the unfavourable circumstances which may attend on this mode of treatment; but you are not to suppose that it often happens that these exist to any considerable extent, or that the probability of their occurrence is sufficient to counterbalance the great advantages which the new operation often presents over that of lithotomy. It would be a great error to represent it as preferable on all occasions; but it is so in a great many instances; and I shall next endeavour, as a guide for your future practice, to explain by what signs you may distinguish from each other the cases to which it is applicable, and those to which it is not.

"In boys under the age of puberty, lithotomy is so simple, and so generally successful, that we ought to hesitate before we abandon it for any other kind of operation.

"There is also a manifest objection to lithotrity in these cases, on account of the small size of the urethra, which is such, that it would not admit of the introduction of instruments of sufficient strength to crush a calculus of more than moderate dimensions.

"In the female sex, the extraction of a calculus from the bladder by the ordinary methods is attended with little danger; while the operation of crushing it is rendered difficult, in consequence of the short and wide urethra allowing the water which has been injected into the bladder to escape by the side of the lithotrity-forceps before the operation is completed.

"In cases in which the calculus has attained a very large size, it is often difficult to seize it with the lithotrity-forceps; the operation of crushing requires to be repeated a great number of times, so that many weeks may elapse before the cure is accomplished; a larger quantity of fragments is left in the bladder, of which the necessary consequence is a great liability to inflammation of the mucous membrane; and of course the inconvenience produced by the passage of the fragments along the urethra is multiplied, as compared with what happens when the calculus is smaller. These circumstances form a sufficient objection to the operation of lithotrity in these cases. It is true, that they are unfavourable cases for lithotomy also; but I have little doubt that the latter method is the safer of the two. It admits of a question, whether, in such cases, the two modes of operating may not be advantageously combined, the calculus being crushed into three or four pieces first, and extracted by the usual incision afterwards.

"The operation of lithotrity, as I have already observed, is not well adapted to those cases of enlargement of the prostate gland, in which the patient is unable to empty the bladder by his own efforts, unless the calculus be of a small size, so that there may be no great difficulty in washing the minute fragments, into which it has been crushed, out of the bladder through a large catheter.

"There is also another objection to the operation in some cases of enlargement of the prostate, namely, that the tumour which projects from it into the cavity of the bladder makes it difficult to ele-

vate the handle of the forceps sufficiently to seize the stone easily in the usual manner."

It is plain, therefore, that there are some cases in which the operation of lithotrity is one of singular value, the testimony in its favour being unimpeachable; but that, on the other hand, there are still a very large number in which the operation is quite unsuitable and hazardous, and that many of these are best treated by lithotomy. In Ireland, in England, and in America, the operation of lithotrity has now fallen into the hands of regular surgeons, and, as might be expected, a corresponding improvement in its application has taken place. By degrees also, as we have already observed, the instruments have undergone a great change for the better. One no longer hears of the frightful accidents which were of so frequent occurrence on its first introduction, and the after accidents almost necessary to it being met by the skilful treatment of the regular surgeon, are now rarely fatal. We shall conclude in the words of the great authority already so often quoted.

"With the exception of such cases as those which have been enumerated, there are few to which this method of treatment may not be advantageously applied. It may be said that the exceptions are numerous; but they are the result chiefly of delay. If a patient seeks the assistance of a competent surgeon within six or even twelve months after a calculus has descended from the kidney into the bladder, the urine having remained acid, it will rarely happen that he may not obtain a cure by a single operation, and with so small an amount of danger, that it need scarcely enter into his calculations. As time advances, the facility with which he can be relieved diminishes, and after the lapse of two or three years, especially if the urine has become alkaline, it is probable that the calculus will have attained such a size as to render the old operation preferable, and that the access of disease in the bladder or kidneys may render any operation hazardous. It would be absurd to say, and it would be unreasonable of human-kind to expect, that an operation which has for its object to relieve them of a disease so terrible as that of a stone in the bladder, can be always free from inconvenience, and difficulty, and danger. Nevertheless, from what experience I have had, I am satisfied that the operation of lithotrity, if had recourse to only in proper cases, is not only much more successful than that of lithotomy, but that it is liable to fewer objections than almost any other of the principal operations of surgery."

*The Principles of General and Comparative Physiology.* By  
W. B. CARPENTER, ESQ., M. D.

*The Principles of Human Physiology.* By W. B. CARPENTER,  
ESQ., M. D.

NOTHING can afford more satisfactory evidence of the rapid progress of biological science, than the comparison of any elementary work written twenty years since, with such a volume as that before us. During the period we have specified, more light has been thrown on the structure and functions of plants and animals, than had been obtained by the labours of any previous century. This result is very easily accounted for, and the causes on which it depends are easily ascertained. In the first place, the progress of the physical sciences, especially of chemistry, necessarily involves a corresponding advance in our physiological knowledge. One most extensive class of functions having for its end the support of the individual, by means of new matter added to its tissues, is, to a certain extent, a chemical process; and hence the functions of the lungs, stomach, liver, and kidneys are only understood in as far as they are chemical, in the same manner as our knowledge of vision and hearing depends on the sciences of optics and acoustics.

There are other phenomena displayed by living bodies, in which a knowledge of chemistry can be of little value in aiding our investigations. The production of a new being, or the functions of the nervous and muscular fibre, can be investigated only by means of observations and experiments, made on living bodies. Even in this difficult department of science, the advance has been rapid, and the means of arriving at general views have been greatly extended. It is evident that in investigating these recondite phenomena, our first business is to ascertain the structures by which they are performed, and then to observe them as exhibited in the living body. Two circumstances have contributed to advance our knowledge respecting the functions of living bodies. The first is the progress of comparative anatomy, and the other, the perfection of our optical instruments. Although the father of modern physiology, the illustrious professor of Göttingen, was aware of the great importance of zootomy in throwing light upon the functions of the human body, and has not neglected them in his immortal work; still it is only since the commencement of the present century, that the real importance of comparative anatomy has been generally understood. The various structures by which the same function is performed in the animal kingdom, may be regarded as so many experiments instituted to our hand, to enable us to determine what the func-

tion truly is, and also what are its relations to the other organs. In this manner the structure of the organs is unfolded before us, and what is matter of inference in man, becomes direct and tangible in the lower animals. Thus the pre-existence of the ovum before impregnation in the ovarium of the human female, was a matter of inference and analogy from what is observed in oviparous (that is the greater number of) animals. It is not merely as an auxiliary in throwing light on the structure and functions of the human body that comparative anatomy is to be regarded; its far more important aid is to enable us to take general views, and to comprehend the vital phenomena, not of animals merely, but also of the vegetable kingdom, under one system, thus constituting the science of biology. Of the three classes under which the vital functions may be classed, two are common to the animal and vegetable kingdoms, and all the researches of modern times have tended to prove that the functions of reproduction and nutrition are essentially the same in plants and animals. This, like every other generalization founded upon rigid induction, becomes the germ of ulterior inquiries, and the analogies derived from it often amount to the utmost certainty. Of this we may allude to a very beautiful illustration. Linnæus, in his treatise on hybrid plants, has arrived at the most accurate and satisfactory conclusions, although all his observations were inaccurate, and consequently of no value; or, in other words, analogy led him to a right theory, in spite of bad observations. In the same way as the function of reproduction is the same in both kingdoms, that of nutrition is also identical in both, and the consideration of this fact alone is sufficient to prove that the influence of the nervous system upon the secretions of animals must always be unessential and indirect. On the other hand, there are also differential phenomena which should restrain our analogical reasoning. Thus the attempts to find the same number of envelopes around the animal and vegetable germ, can only lead to confusion and perplexity. In the same way, the comparison of the molecules included in the pollen of plants to the spermatic vermiculi of animals, seems, to say the least of it, premature.

Microscopic researches may be regarded as included under comparative anatomy, inasmuch as they consist in pushing our investigations farther than the unassisted eye would enable us to do. Of late years, however, naturalists and physiologists have been enabled to avail themselves of the microscope to an extent unrivalled since the times of Leuwenhoeck, and with corresponding results. The complicated organization which Ehrenberg has demonstrated to exist in infusoria, has afforded a

powerful negative argument against the hypothesis of spontaneous generation and La Marckian dreams respecting the translation of species. Among the positive advantages derived from this means of inquiry, we may mention the correct ideas which we now possess respecting the early development and structure of the animal ovum, and also the formation of pollen, and its passage from the stigma to the ovule in vegetables.

It is a merit of the work before us that the author has exhibited a very complete, and, upon the whole, satisfactory view of the functions of the human body. The author has given us the results of a great amount of reading and study on the subject, he has consulted the best authors, and what is more important, has detailed their views with candour and accuracy. Another merit of these principles of physiology is, that the functions of man are always illustrated when necessary by the analogies drawn from the animal and vegetable kingdoms, so that human physiology is represented as what it truly is, a portion of the vast field of vital or biological science.

While Dr. Carpenter's work is the most complete which we possess on the subject of human physiology, it has one fault of a very grave nature, we mean its diffuseness of language, and consequent obscurity. In the descriptive portions of the work, where the structure of an organ is related or its functions explained, a little attention may overcome the inconvenience alluded to, but when the author enters upon a train of reasoning we confess we are rarely able to follow him, and soon lose all hold of his ideas. It is this obscurity of diction, if not of thought, that has in our opinion led to the various controversies in which the author has been engaged. Without the smallest intention to give offence, but rather with the desire to point out a blemish which is capable of being removed, we will illustrate our meaning by quoting a few examples. Thus at page 25 we find the following expression: "*The perfection of the articulate structure has been shown to consist in the development of these powers, &c.*" The meaning of this definition escapes; how can the perfection of a structure consist in the development of powers? Again, at page 60, we are told, that "*the operations of the mind and its instruments, taken collectively, constitute what are known as the functions of animal life.*" Here the mind and body taken together are defined to be functions, and functions of a peculiar kind.

In accordance with this obscure way of writing we find also, especially on abstract topics, a very vague style of thinking. The speculations in which the author indulges respecting mental phenomena, and their relations to the bodily organs, are, to say

the least, sufficiently startling, although not novel. Dr. Carpenter appears to view all the mental acts as merely cerebral phenomena, in shorter and plainer language than he himself employs, as functions of the nervous system. In accordance with these views we are told, that "memory seems clearly the result of the permanency of the *material* change [a permanent change] effected by the sensation," p. 60. "Perception is the notion of the cause of a sensation," p. 222. "The acquirement of these perceptions is clearly a cerebral operation," p. 223.

"In regard to the moral feelings it would seem equally impossible to separate these by a distinct line from the lower passions and instinctive propensities, which are so *closely connected* with *material changes* as not to be *distinguishable from them*."

It is not our intention to discuss all the perplexed thought involved in these views, or the frequent occurrence of that fallacy in which the middle term has two significations, and which perhaps leads into more mistakes than all other fallacies put together. The following remarks, however, are sufficiently obvious. Every being, whether living or inanimate, is adapted to the position which it occupies in creation. Mercury could not remain liquid, nor could animals live if transported to the void of planetary space. In like manner, the solidity of the most infusible substances would be destroyed, and terrestrial animals perish if removed to the source of solar heat. It is therefore sufficiently absurd to say that the influence of external agents is the cause of vital phenomena; on the contrary, their excess destroys the structure of the plant or animal, and in due proportion the living being displays its appropriate actions. Living bodies composed of the same substances as also occur in the organic kingdom, are therefore subjected to the general properties of matter. The functions of the leaf depend upon the diurnal revolutions of our planet, in the same manner as the formation of pollen, and the maturation of seeds, are determined by its annual course. It is the same in the animal kingdom, as obviously in the cases of migration and hybernation. In like manner chemical molecular action is as active in living as in inert bodies; and the function of nutrition, taken in its widest sense, consists, in fact, in the display of decompositions on the one hand, and the formation of compounds on the other.

But besides the ordinary physical and chemical laws which influence living bodies, phenomena of a very different kind are also exhibited, which are as different from any thing chemical or mechanical as can well be conceived. Let us select as an example, a small filament of a confervoid plant. It consists of a

congeries of cells, which absorb liquid matters, and decompose carbonic acid during the day—and thus form organic compounds fit for its growth. So far the phenomena have been chemical ; but in addition to this, the little filament possesses other powers of a nature altogether peculiar, and from the organizable matter which it has elaborated, it constructs cells which add to the substance of the original plant, and act on the carbonic acid in the same manner. Nor is this all ; at certain periods the little plant forms granules, which when thrown off become new plants. Such phenomena are assuredly different from those of chemistry and electricity ; we might as well explain the formation of the honey-comb on chemical principles, as those of a *conserva* or an *agaric*.

The cause of these vital phenomena is as different from chemical affinity as that is from the repulsive power of heat. To complain that in this manner we introduce an occult cause, or that we thus multiply instead of diminishing such causes, was the objection urged by the Cartesians against the Newtonian theory. Such objections have, however, extremely little influence on the mind of any one who has studied the history of the sciences. The ancients attributed physical properties, such as those of the magnet or amber, to the influence of a soul. In modern times the theory of universal gravitation has been admitted ; afterwards chemical affinity took a place in philosophy ; electro-magnetism and crystallization are also acknowledged. In short, the progress of science has displayed natural bodies under new and unheard of relations, and hence the necessity of admitting new properties. If we admit that vital phenomena must be ranged under a category of their own, we merely follow the course which the progress of science has pointed out. If by classing these phenomena apart, it be objected that we introduce an occult cause, we may state that the same prejudice retarded the progress of the Newtonian philosophy in France ; and that in the same country, and for the same reason, the researches of Geoffroy, respecting elective affinities, were nearly suppressed. This objection, in fact, arises from a confusion of thought which is easily explained. Gravitation is viewed as the cause of a vast number of phenomena, when in fact it is no cause at all, it is merely a general theoretical expression, comprehending a vast multitude of phenomena. It is because physical astronomy is nearly a perfect science, and that natural philosophy has made great progress, that the phenomena of gravitation can be taught in the *a priori* manner, and hence the prejudice. In respect to physiology the case is the same ; if we endeavour to explain phenomena by the aid of the term vital principle, we retrograde

into the errors of Von Helmont, Bordieu, and Borthiez. If, on the contrary, we consider nutrition and reproduction as vital properties, we speak still more absurdly, as we merely state that the vital properties are the causes of their own existence. We would prefer to either of the preceding modes of thinking to express by the term vitality, those phenomena which take place in all living bodies, and which are as distinct from chemical laws, or from gravitation, or electro-magnetism, as any of these differ from each other. In short, these views we consider to be very remote from anything like mystery; and, they are such as must be admitted alike by the materialist and his opponent.

If we now proceed to the animal kingdom, we find the vital phenomena rendered still more complex by the presence of sensation and volition. Here, it must be admitted, we have the important relations of mind and body to consider. It is, of course, readily admitted, that every change which takes place in the brain or nerves must be merely some change in the condition of their constituent particles; that from this to the conclusion adopted by Dr. Carpenter, that mental and cerebral functions are one and the same thing, a wide hiatus intervenes. If such be the case, we may ask what are thoughts and feelings? If distinct from matter that is all that we are inclined to contend for. If properties of matter, we should feel anxious to know on what conditions of matter they depend. We confess that, in our opinion, the doctrine of spontaneous generation appears much more reasonable than this spontaneous production of ideas from the changes taking place in the nervous pulp. That a quantity of decomposing organic matter should give rise to a tremella or a paramecium, is far less surprising than that the vibrations of nervous filaments should have produced the stately verses of the Iliad, or the tender yet sublime sentiments of a Fenelon or a Pascal. The opinion that the cerebral and mental functions are the same, arises, we believe, in many cases from a difficulty of conceiving how mind and matter can influence each other. This difficulty, however, is one which pervades every instance where events are connected as cause and effect. If we cannot explain the reciprocal interferences of mind and matter, can we explain how heat liquefies solids, or that water attains its greatest density at a temperature of forty.

On the other hand, that mind does act on matter, and is also distinct from it, we are perfectly certain. Every example of a final cause in the universe is an evidence of this truth; and we see in all the works of nature a supreme intellect acting by his will on the works of his power.

Although we are thus averse to the views entertained by Dr.

Carpenter, we are aware that they have been entertained by men of the utmost worth and piety ; Bonnet and Hartley are examples, and, we may add, our author, who resembles the two philosophers we have named, not only in their turn of mind, but also in the excellence of character. We have, however, to regret the obscurity, and most illogical manner in which these topics are handled. Candour in statement, not depth of reasoning power, is the character of Dr. Carpenter's writings.

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*The Climate of the United States and its Endemic Influences. Based chiefly on the Records of the Medical Department, and Adjutant General's Office, United States Army. By SAMUEL FORRY, M. D. New York, 1842, 8vo. pp. 378.*

THIS is a sensible and useful work upon a subject of much importance and daily increasing interest, in the execution of which the author has displayed considerable acquaintance with the sciences bearing upon the subject of climate, great industry and exactness in the collection of facts to serve as data for his general conclusions, and impartiality and judgment in the opinions expressed upon questions regarding which medical writers were previously not agreed, more especially on the effects of climate in pulmonary affections.

His division of the subject strikes us as being very clear and judicious. The first part of the book he devotes to researches into the laws of climate in general, and especially to the climatic features peculiar to the United States ; in the course of which he enters at length into an examination of the laws of temperature in general, and the influence it suffers from the different circumstances of elevation, collections of water, oceanic currents, cultivation of the soil, &c. ; and discusses the evidence for and against a gradual change of climate in the old and new worlds, deciding that there is no sufficient evidence of a permanent change of climate in either continent, adding, however, that " it may be assumed, that although cultivation of the soil may not be productive of a sensible change in the mean annual temperature, yet such a modification in the distribution of heat among the seasons may be induced, as will greatly influence vegetation."

The second part contains the application of the laws developed in the former to the elucidation of disease. He thus states the objects in view :

" Having thus brought under view the meteorological facts determined by observation, which may be supposed to exercise an agency in the causation of morbid action, it will be practicable to establish

certain relations between these causes and the statistical results furnished by diseases.

"The term *climate*, which is limited in its rigorous acceptance to a mere geographical division, and in ordinary parlance to the temperature only of a region, possesses in medical science a wider signification. It embraces not only the temperature of the atmosphere, but all those modifications of it which produce a sensible effect on our organs, such as its serenity and humidity, changes of electric tension, variations of barometric pressure, the admixture of terrestrial emanations dissolved in its moisture, and its tranquillity as respects both vertical and horizontal currents. Climate in a word, as already defined, constitutes the aggregate of all the external physical circumstances appertaining to each locality in its relation to organized nature. 'To observe,' says Mr. Rostan, 'the simultaneous effects of light, heat, electricity, the winds, &c., on the organic productions of the different zones of the earth, to explore the nature of this earth, to deduce from this knowledge the influence which they exercise on the physical and moral state of man, such is the wide field which climates present to our investigation.'

"The little knowledge which we possess upon these various points is far from being precise. On the one hand, we are ignorant what constitutes the real elements of climate, and on the other hand, these complex agents act upon living organs still more complex in their functions. Our knowledge heretofore has consisted mainly of the unexplained results of experience. As the subject does not admit of the precision of the exact sciences, the aid of induction and analogy must be invoked. Having once acquired a knowledge of the distinctive characters of different systems of climate, and of their effects upon the animal economy, both in health and disease, the general laws regulating such influences may be readily ascertained. In the present inquiry (notwithstanding it is necessary, in attempting to determine the relation subsisting between climate and vital action, to take into view the simultaneous influence of all meteorological causes) the temperature of the air and its hygrometrical state will be more especially considered. In regard to the remaining elements of climate, such as the admixture of terrestrial emanations dissolved in atmospheric moisture, our positive knowledge is still more limited. That mysterious agent—malaria, though too well recognized in its deleterious effects on the human frame, has hitherto remained inscrutable in its nature.

"It is thus seen that there are many circumstances besides mere temperature which enter into the constitution of climate. Amongst these as influencing organized beings, one of the most important is the nature of *soil*, the formation of which has apparently been the result of the gradual attrition of the solid materials composing the crust of the globe. As all animals and vegetables, at least all land animals, are dependant for existence on this stratum of comminuted mineral substances and organic remains, its influence in regard not only to mere health, but the organic modifications which the human frame experiences, constitutes an interesting subject of inquiry.

"We come now to a description of special posts."—p. 127.

A large portion of the work is devoted to the examination of the topography and statistics of the different military posts of the States. As this is not likely to prove interesting to our readers, we will confine our brief notice to the concluding sections, "general deductions on the influence of climate in certain diseases," and "observations on endemic influences in general."

We shall select a few passages from a long and interesting chapter on the influence of the climate of different posts on pulmonary affections.

"Having already demonstrated that the regions of the United States on the same parallels of latitude present systems of climate very diverse in character, viz., 1. the regions bordering on the ocean; 2. those under the influence of inland seas; and 3, those remote from such controlling powers; it will be seen that these laws of climate maintain an intimate relation with the etiology of pulmonic diseases. It seems to be a well-established law, that the prevalence of *catarrh* and *influenza* in each system of climate increases and decreases in proportion as the seasons are contrasted, thus maintaining an unvarying relation with the extreme range of the thermometer as connected with the seasons.

"Take, for example, the northern division, consisting of the above three classes. On the New England coast, as the ocean modifies the atmospheric temperature, the annual ratio (of catarrhal cases) treated per 1,000 mean strength is as low as 233. On the great lakes, where a similar modifying influence is in operation, it is 300, whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552. But let us follow more narrowly the isothermal and isochermal lines (representing the mean temperature of summer and winter) which describe four curves within the same space, presenting alternately a *mild* and an *excessive* climate: As these lines on the coast of the Atlantic present comparatively little deviation from the terrestrial parallel, the ratio of catarrhal diseases is low; advancing into the interior, the line of equal summer rises and that of winter falls, and the ratio increases proportionally; proceeding into the region of the lakes, the lines again converge beneath the controlling power of the waters, and the ratio of catarrh and influenza is modified accordingly. Again, advancing into the interior, beyond these ocean lakes, the average rises in proportion as the isothermal and isochermal curves tend to opposite directions. In the other divisions the same law obtains. On the Atlantic coast, between the Delaware and Savannah rivers, the annual ratio is 271, while the average of the interior posts of the middle division, notwithstanding this class lies somewhat farther south than the former, is 290. As most of the posts of the first class of the southern division are on the lower Mississippi, and are much under the influence of large bodies of water, the annual ratio is as low as 218, while the second class, which comprehends the mild insular climate of East Florida, has an average of only 143.

"It would seem then, at first view, that sudden atmospheric vicissitudes, combined with moisture, do not excite a strong susceptibility to catarrhal diseases, else the sea coast and the lakes should give a higher ratio than the dry and cold atmosphere of the opposite localities; but here it is necessary to bear in mind, that the former condition is an *exciting*, and the latter a *predisposing* cause. The results, on every hand, afford satisfactory proof that the ratios of these lesions are highest when the seasons are well-marked, producing a decided impression on the animal economy, and that they are less dependent upon daily variations of temperature than upon its extreme range as connected with the seasons."

On treating of the influence of climate on tubercular phthisis, Dr. Forry enters into a lengthened examination of the statements put forward by Major Tulloch, in his reports on the sickness and mortality of the British army, as to the greater prevalence of this disease in southerly stations, as the West Indies, Gibraltar, Malta, &c., and argues strongly, and we think conclusively, against the inference, "that it is by no means likely that any beneficial effect can be exerted by climate itself." He contends for a distinction between continuous residence in these situations, and mere *winter* residence, because, in the former the patient would, according to his views, be exposed to the predisposing influence of great extremes of temperature, and in some of the localities (as the West Indies) to the undermining of the constitution, and consequent facilitating of the attack of disease by the effects of malaria, and of the diseases prevalent in these latitudes; while on the other hand, a *mere winter residence* would procure that evenness of annual temperature which his statistical researches have proved to be an invariable element in a climate not favourable to pulmonic affections. We can only make room for one extract more on this subject. In the concluding paragraph of the section, the reporter of the United States army thus lectures him of the British.

"It is thus seen that the conclusion of the reporter, that the class of pulmonary diseases is more prevalent and fatal in southern than in northern latitudes, is the result of hasty generalization, or rather that it has arisen from a classification of climates on mere latitudes, without reference to the phenomena of temperature induced by local causes. Although the reporter has in some measure set the world right in regard to a *theoretical* error he has unfortunately, at the same time, led it into a *practical* one. His first error was assuming the climate of England as the standard of comparison; the second, comparing the *lowest* average in one command with the *highest* in another; and the third, basing his deductions on the *annual* results without reference to the relative influence of the *seasons*. It thus appears that figures are not facts, and hence the necessity of ascertaining the correctness of the data represented by numerals. Arithme-

tical reasoning is of all kinds the most fallacious, for not unfrequently the error in the premises can only be detected by the absurdity of the results. The more attention has been devoted to this subject in consideration of its importance to the pulmonary invalid, and from the conviction that the evil influence of false doctrines bears a direct ratio to the character of the authority whence it emanates."—p. 271.

In the next chapter he investigates the statistics of rheumatism, and infers that as regards the influence of climate it would appear that acute rheumatic affections, like those of the lungs, are less dependent on mere variations of temperature, than upon its extreme range, as connected with the seasons, the former being an exciting, and the latter a predisposing cause.

The author next proceeds to the consideration of diseases arising from malaria; but the subject is too extensive and important for us to enter on at present. Other works on this subject (especially the late reports of committees on the health of towns) deserve an early notice; and at the same time we will return to this portion of our author's book, which, meanwhile, we recommend to the notice of the Profession.

## SCIENTIFIC INTELLIGENCE.

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*Professor Liebig's Theory of Animal Heat.*—According to Lavoisier, an adult man takes into his system, every year, 887lbs. of oxygen, and yet he does not increase in weight. What, then, becomes of the enormous quantity of oxygen introduced in the course of the year into the human system? The carbon and hydrogen of certain parts of the body have entered into combination with the oxygen introduced through the lungs and through the skin, and have been given out in the form of carbonic acid, and the vapour of water. At every moment, with every expiration, parts of the body are thus removed, and are emitted into the atmosphere. No part of the oxygen inspired is again expired as such. Now it is found that an adult inspires  $32\frac{1}{2}$  oz. of oxygen daily. This will convert the carbon of 24lbs. of blood into carbonic acid. He must, therefore, take as much nutriment as will supply this daily loss; and, in fact, it is found that he does so: for the average amount of carbon in the daily food of an adult man, taking moderate exercise, is 14 oz., which require 37 oz. of oxygen for their conversion into carbonic acid. But it is obvious, as the inspired oxygen can be removed only by its conversion into carbonic acid and water, that the amount of food necessary for the support of the animal body, must be in direct ratio to the quantity of oxygen taken into the system. Thus, a child, in whom the organs of respiration are naturally in a state of great activity, requires food more frequently, and in greater proportion to its bulk, than an adult, and is also less patient of hunger. A bird, deprived of food, dies on the third day; whilst a serpent, which inspires a mere trace of oxygen, can live without food for three months. The capacity of the chest in an animal, is a constant quantity. We, therefore, inspire the same *volume* of air, whether at the pole or the equator. But the weight of the air, and consequently of the oxygen, varies with the temperature. Thus, an adult man takes into the system daily 46,000 cubic inches of oxygen, which, if the temperature be  $77^{\circ}$ , weigh  $32\frac{1}{2}$  oz.; but when the temperature sinks down to the freezing point ( $32^{\circ}$ ), it will weigh 35 oz. Thus, an adult in our climate in winter may inhale 35 oz. of oxygen; in Sicily he would inspire only  $28\frac{1}{2}$  oz.; and if in Sweden, 36 oz. Hence, we inspire more carbon in cold weather, when the barometer is high, than we do in warm weather; and we must consume more or less carbon in our food in the same proportion. In our own climate, the difference between summer and

winter in the carbon expired, and therefore necessary for food, is as much as an eighth. Even when we consume equal weights of food, an infinitely wise Creator has so adjusted it as to meet the exigencies of climate. Thus, the fruit on which the inhabitants of the south delight to feed, contains only 12 per cent. of carbon, whilst the bacon and train oil enjoyed by the inhabitants of the arctic regions, contain from 66 to 80 per cent. of the same element.

Now the mutual action between the elements of food and the oxygen of the air, *is the source of animal heat*. All living creatures, whose existence depends on the absorption of oxygen, possess within themselves a source of heat, independent of the medium in which they exist. This heat, in Professor Liebig's opinion, is wholly due to the combustion of the carbon and hydrogen contained in the food which they consume. Animal heat exists only in those parts of the body through which arterial blood (and with it oxygen in solution) circulates. The carbon and hydrogen of food, in being converted by oxygen into carbonic acid and water, must give out as much heat as if they were burned in the open air. The only difference is, that this heat is spread over unequal spaces of time; but the actual amount is always the same. The temperature of the human body is the same in the torrid as in the frigid zone. But as the body may be considered in the light of a heated vessel, which cools with an accelerated rapidity the colder the surrounding medium, it is obvious that the fuel necessary to retain its heat must vary in different climates. Thus, less heat is necessary in Palermo, where the temperature of the air is that of the human body, than in the polar regions, where it is about 90° lower. In the animal body, the food is the fuel; and, by a proper supply of oxygen, we obtain the food given out during its combustion in winter. When we take exercise in a cold atmosphere, we respire a greater amount of oxygen, which implies a more abundant supply of carbon in the food; and, by taking this food, we form the most efficient protection against the cold. A starving man is soon frozen to death; and every one knows that the animals of prey of the arctic regions are far more voracious than those of the torrid zone. Our clothing is merely an equivalent for food; and the more warmly we are clothed, the less food we require. Were we to go destitute of clothes, like certain savage tribes—or if, in hunting or fishing, we were exposed to the same degree of cold as the Samoyedes—we could, with ease, consume 10lbs. of flesh, and, perhaps, a dozen tallow candles into the bargain, as warmly clad travellers have related, with astonishment, of those people. Then could we take the same quantity of brandy or blubber of fish, without bad effects, and learn to appreciate the delicacy of train oil.

We thus perceive an explanation of the apparently anomalous habits of different nations. The macaroni of the Italian, and the train oil of the Greenlander and the Russian, are not adventitious freaks of taste, but necessary articles fitted to administer to their comfort in the climates in which they have been born. The colder the region, the more combustible must the food be. The Englishman in Jamaica perceives with regret the disappearance of his appe-

tite, which, in England, had been a constant recurring source of enjoyment. By the use of aromatics, he creates an artificial appetite, and eats as much food as he did at home. But he thus unfits himself for the climate in which he is placed; for sufficient oxygen does not enter his system to combine with the carbon consumed; and the heat of the climate prevents him taking exercise to increase the number of his respirations. The carbon of the food is therefore forced into other channels, and disease results. England, on the other hand, sends her dyspeptic patients to southern climates. In our own land their impaired digestive organs are unable to fit the food for that state in which it best unites with the oxygen of the air, which therefore acts on the organs of respiration themselves, thus producing pulmonary complaints. But when they are removed to warmer climates, they absorb less oxygen, and take less food; and the diseased organs of digestion have sufficient power to place the diminished amount of food in equilibrium with the respired oxygen. Just as we would expect from these views, in our own climate, hepatic diseases, or diseases arising from excess of carbon, are more prevalent in summer, and in winter pulmonic diseases, or those arising from an excess of oxygen.—*Provincial Medical Journal*.

*Minute Anatomy of the Hair*.—Most of the hairs consist of two distinct substances: an external, cortical, hard, and fibrous part, and an internal, medullary, granular portion, on which their colour chiefly depends. Moderately magnified, hairs look like empty tubes, but in fine transverse sections no central apertures can be seen.

The *cortical part* of the hair is fibrous. Very delicate longitudinal striæ may be traced on it, becoming more faint as they pass from the root to the tip, and in general invisible at a little distance from the latter. They are traceable through the whole thickness of the cortical substance to the very wall of the medullary portion, and indicate the outlines of the component fibres. The latter are, according to Helne, each about  $\frac{1}{1000}$  of an inch in breadth, flat, rigid, and brittle, with dark and rough edges. But they may be probably further split, for, after maceration in hydrochloric acid, Bidder found the diameter of the thickest part of a single fibre to be only  $\frac{1}{17000}$  of an inch; and Brun's about  $\frac{1}{8000}$ : so that probably each of the fibres whose course is marked by the striæ is made up of several smaller ones. In some hairs, moreover, the fibres appear at certain parts, either irregularly, or at definite distances, enlarged; and thus the whole shaft sometimes assumes a beaded appearance.

Besides these longitudinal striæ, indicating the fibrous structure of its cortical part, the surface of the hair is marked by transverse and oblique, and sometimes apparently spiral, wavy lines arranged in a very close series. Meyer has shown that these are formed by the slightly projecting edges of tiers of minute scales like those of the epidermis, but much smaller, which, being closely implicated in whorls one over the other, invest the whole surface of the hair, and form a sheath round its cortical part, extending nearly to its tip. They make the hair look as if it were irregularly *hooped* round; or

rather, when the hair is very strong, as if it were a closely-jointed reed.

The *interior medullary portion* of the hair is darker than the exterior and granular. It is composed, for the most part, of very minute globules, like pigment granules or drops of oil agglomerated in small lumps. Sometimes these form one dark mass, continued along the whole shaft of the hair; but more commonly the mass seems broken up, so that there are intervals of different sizes along the axis of the shaft. These are sometimes filled by a substance like the cortical part, and the medullary matter then seems altogether deficient; but more often they are occupied by a colourless substance, clearer and softer than the exterior fibrous tissue. The diameter of this medullary part, when it is completely formed, is about  $\frac{1}{3}$  or  $\frac{1}{4}$  of that of the whole shaft; transverse sections of hairs exhibit it like a nucleus, with a clear ring around it; along its walls there are often complete pigment-cells, with clear nuclei and transparent membranes.

At the tip, the hair gradually becomes more and more fine, and usually ends in a rounded point, at and near which neither striæ nor medullary substance can in general be seen. At the root it rather suddenly enlarges into a funnel-shaped extremity, which Henle has named the *knob* of the hair, and which is about three times as wide as the shaft. Just before the hair begins thus to enlarge, the transverse striæ produced by the outermost layers of imbricated scales, are very distinct and broad; but they suddenly cease to be discernible. At the same part the longitudinal striæ become finer, and seem to diverge. But, in addition to these, the knob is marked by coarse, dark, longitudinal striæ, which look like short, interrupted furrows, but which are produced by small, flat, metamorphosed nuclei, about  $\frac{1}{16}$  of an inch long, and  $\frac{1}{16}$  broad. They are the largest at the upper part of the knob, and are often tortuous or connected together by fine filaments; lower down they are broader and oval or spindle-shaped, and lower still they pass into roundish or angular granules, like the nuclei of the rete Malpighii. They lie closely in a firm, pellucid substance, and sometimes seem surrounded by cell-membranes, among which, in dark hairs, numerous pigment granules are scattered.

The *knob* of the hair and the nearest part of the shaft are pretty closely invested with a membrane, for which Henle proposes the name of the *sheath*, and of which some or the whole is pulled out when a hair is plucked from the skin. It is continuous with the epidermis, and may be regarded as the epithelium lining the hair-follicle. It is composed of two layers, of which the outer and thicker is yellowish, granular, and thickly set with superficial nuclei, the inner clear, and much thinner, and perforated by numerous round, oval, and elongated apertures, but having no trace of cells or fibres. Below, the two layers are united together, and with the exterior of the knob; above, a small space filled with fatty matter intervenes between them and the exterior of that part of the shaft of the hair which is below the surface of the skin.—M. PAGET, *British and Foreign Med. Review*.

*Blood-vessels.* A. *Arteries*.—After a variety of conflicting and

unsatisfactory accounts, Henle seems at length to have discerned such structures in the arteries as are adapted to the functions which experiment shows to be performed by them.

His account of their general structure is briefly this: 1st. They have an epithelial lining, consisting of a very thin layer of elliptic or rhombic lamellar cells, which are somewhat elongated into longitudinal, spindle-shaped fibres. 2nd. There is, immediately external to this, a layer of peculiar tissue, the *striated* or *fenestrated coat* (corresponding to the *internal coat* of the older anatomists), consisting of a very thin, rather stiff, and brittle membrane, bearing pale, flat, very narrow fibres, which have, for the most part, a longitudinal direction, and give it a peculiar delicately-striated appearance. This coat, which is often morbidly thickened, and, when an artery is contracted, is commonly thrown into longitudinal folds, is produced by a metamorphosis of the epithelium, which, as the nuclei of its cells disappear, becomes a homogeneous membrane, on which the fibres are afterwards deposited, and which, at last, is completely removed, leaving the fibres free. 3rd. In some arteries there is, next, a coat formed by a single layer of longitudinal granular fibres, flat, and tolerably wide, analogous to a coat which is much more prominent in the veins. 4th. A coat composed of *circular fibres* (the *middle* or *elastic* coat of most former writers, the *muscular* coat of Hunter), which forms the chief part of the arterial wall, and comprises all that can be torn from it in a transverse direction. Its fibres are flat, clear, and granular, and break with abrupt ends. Each of them is commonly marked along its middle by dots scattered, or regularly arranged in a longitudinal row, or by a narrow streak: these are the remains of elongated nuclei, which have formed as it were the pattern, according to which the homogeneous membrane in which they lay has broken up into the fibres. The streaks formed of the elongated nuclei often branch and anastomose, so as to form that kind of network which has led to this coat being mistaken for elastic tissue; whereas it is, in fact, the proper contractile coat of the artery, and is, in all respects of development, and microscopic structure, similar to the layers of organic muscle in the stomach, &c. 5th. On its exterior there is a coat of genuine elastic tissue (*tissu jaune*, the *elastic coat* of Hunter); this exists, however, only in the larger arteries, and its thickness, in comparison with that of the preceding, diminishes in direct proportion to the size of the artery. The direction of its fibres varies greatly in different arteries. 6th. The *external cellular coat* consisting of common cellular tissue, with longitudinal closely-woven filaments.

The conclusions from these facts, which, as already said, are the first of the kind that have accorded with the results of experiment and observation of the functions of the arteries, may be expressed in Hunter's words: "From the account we have given of the substances which compose an artery, we may perceive it has two powers, the one elastic and the other muscular. We see also that the larger arteries are principally endowed with the elastic power, and the smaller with the muscular; that the elastic is always gradually diminishing in the

smaller, and the muscular increasing, till, at last, probably, the action of an artery is almost wholly muscular; yet I think it is not to be supposed but that some degree of elasticity is continued to the extremity of an artery."

"The muscular power of an artery acts chiefly in a transverse direction; . . . the elastic power exists almost entirely in the external coat; the internal coat must be the seat of the muscular power . . . Arteries are the conductors and disposers of the blood. . . . The elastic (power of reaction) is best fitted for sustaining a force applied to it (such as the motion of the blood given by the heart), and propelling it along the vessel; the muscular power, most probably, is required to assist in continuing that motion, the force of the heart being partly spent, but certainly was intended to dispose of the blood when arrived at its place of destination."

**B. Veins.**—The six coats already mentioned include all that are found in the blood-vessels; and the distinctions of the several orders depend on the proportional quantities of these coats present in each. The veins, according to Henle, have, 1st, a lining of epithelium, like that of the arteries; 2nd, a striated or fenestrated coat, similar to the second in the arteries; 3rd, a longitudinally fibrous coat, analogous to that in the arteries, but in the large veins, formed of several strata, and often morbidly thickened; 4th, a layer, occupying the place of the contractile circular-fibred coat of the arteries, but much thinner than it, and chiefly or entirely composed of fasciculi of cellular tissue, which like that of the skin and dartos may be regarded as contractile; and 5th, the external cellular coat, with longitudinal fasciculi. The true elastic coat is absent.

The valves exist in veins of less than a line in diameter, wherever their office is to be fulfilled. They are covered by the epithelium, and consist of tissue like that of fibrous membranes, which, as Hunter observed, proves that they are not duplicatures of the lining membrane. In the larger valves this tissue is mixed with some like that of the striated membrane of the vein.

Very few conclusions can yet be drawn from these facts, respecting the active functions of the veins. Such as they are, however, they might also be quoted from Hunter, who says, that the veins have nearly the same elasticity with the arteries; that their muscular (contractile) power is very considerable; that the former in some degree preserves them in a middle state; and that the latter adapts them to the various circumstances which require the area to be within that state.

**C. Capillaries.**—However little the microscope may have contributed to the knowledge of the foregoing part of the circulatory system, it has taught all that is known of this, the more important portion of it. It may indeed be regarded as one of its chief honours that it was the means of obtaining the knowledge of the last fact essential to the full proof of the circulation of the blood. Harvey could only prove that the arteries carry blood from the heart, and that the veins bring it back; of the passage from one set of vessels to the other at their distal extremities he knew nothing, and only in the later part

of his researches, decided that it was not by the wide channels, which the older writers called *anastomoses*, but probably through a *parenchyma*, in which the blood was infiltrated. The real mode of transit was first proved by Malpighi, in 1661, by a microscopic examination of the circulation in the distended urinary bladder of a frog. His facts were soon confirmed by many others, and especially by Leeuwenhoeck.

*Form and Arrangement.*—It was not, however, till long after this time that the general existence of capillaries was admitted; and when it was granted, volumes of hypotheses were written about their arrangement, and their various relations to the parts around them. Of late years the microscope has established the truth in far greater simplicity than the imagination had pictured it; proving that, to whatever part the blood is sent, it either passes directly from arteries to veins (both of very small size) or flows from one to the other through a network of minute canals; that it never, at least in the healthy state, passes from the blood-vessels into any other canals or cavities, or into the tissues around them; and that the only mode of communication between the cavity of the vessels, and any other part of the body, is through the invisibly-minute pores, which exist as well in the walls of the capillaries and small vessels as in all organized tissues.

But, though these facts have cleared the way for truth, they have not afforded a deeper insight into the real nature of those processes in which the contents of the capillaries come into immediate relation with the surrounding parts. Marvellous as are the structures revealed by the beautiful art of injection, one cannot yet trace the particular purposes that are served by any of the numerous varieties of vascular arrangement; from Swammerdam, who first employed it as a means of preparation in 1667, to the present day, it has shown increasing wonders of form, but has scarcely afforded a glimpse of the intimate nature of any process.

It will, therefore, be unnecessary to enter into all the details of the arrangements of the capillaries and small vessels in the several organs and tissues. The general facts are these—that the capillaries compose networks permeating the interspaces of the proper elements of each organ and tissue; that the diameters of their canals (which are all of nearly equal size in the same part) vary from  $\frac{1}{1000}$  to  $\frac{1}{100}$  of an inch, the most common size being about  $\frac{1}{300}$ ; that the meshes generally bear a close relation in form to the predominant disposition of the proper elements of the tissue, and are in some parts (as the lungs, the choroid, and some mucous membranes) even narrower than the vessels around them, but more commonly are three or four times wider; and that, as a general rule, the more active the functions of a part (especially if it be an organ of secretion), the closer is its network of capillaries.

2. *Structure.*—The capillaries have distinct walls, and are not mere channels drilled in the tissues around them. In some parts they seem to constitute the main tissue, as in the pia mater, which is an irregular vascular net-work, with a few cells scattered in its meshes, and the smallest possible quantity of cellular tissue, the vessels

in the pulpy membrane of the cochlea of birds, and, as Mr. Bowman has lately discovered, the corpora Malpighiana; in others they are separable from the soft surrounding tissues, as in the choroid, iris, and retina; and in all parts of which the tissues around them are well distinguished by colour and compactness, the walls of the capillaries are plainly discernible. The only question now is concerning the tissues which compose them.

According to Henle, the finest vessels are composed of a completely structureless membrane, in which no fibres or striæ are ever discernible, but which bears minute oval corpuscles, the persistent nuclei of the cells from which the capillaries are formed; they are placed longitudinally upon the vessels, and are arranged in one, or two, or alternates rows. This may be named the *primary vascular membrane*, because it appears to be the direct product of the primary cell from which the capillary vessel is formed, and because, in various development, it exists in the vessels of every kind. In vessels of a size just larger than the capillaries, the nuclei of the primary membrane are considerably elongated; and there are added an inner layer of epithelium-cells and an outer layer of pellucid membrane, bearing elongated, transverse cell nuclei. The latter represents an early stage of the circularly-fibrous coat of the larger arteries. It is from these elongated, longitudinal, and transverse nuclei, that vessels of this size acquire the appearance from which Schwann and Valentin deduced that they had transverse fibres, and the latter that they possessed both elastic and cellular tissue. Dr. Martin Barry, probably in the same structures, discerns compound double-spiral filaments wound spirally around the vessels.

3. *Functions.*—The knowledge of the mode of circulation in the capillaries is entirely due to the microscope, but it must be admitted, that except in Dr. Barry's account of their structure, there is no anatomical confirmation of that which other modes of observation have shown, namely, that they and the small arteries and veins are not merely passive tubes, but may exercise a power of regulating the flow of blood through them.

Under ordinary circumstances the blood moves through the systemic capillaries in an even stream, at an average rate of an inch in a minute and a half, and through the pulmonic system at the rate of about five inches in the same time. But many circumstances influence the diameter of the capillaries, and the motion of the blood in them. Besides the pathological changes which they undergo, the small arteries and capillaries are seen to be contracted by cold, and by warmth to be slightly enlarged; under the influence of certain irritants also, such as capsicum, or an essential oil, they contract, and again, immediately after, dilate, which fully confirms what general observations had made probable, namely, that during life a power is exerted, by which the small vessels, changing their diameter, can control the passage of their contents. And, in like manner, some confirmation has been afforded to the evidence from experiment, that this power is exerted under the influence of the nerves; for an anatomical connexion between the latter and the small vessels has been

proved by Purkinje, Valentin, Remak, Henle, and others, who have seen the finest nervous filaments on the wall of the cerebral and other blood-vessels, of less than  $\frac{1}{10}$  of an inch in diameter.

M. Poiseuille has greatly added to the knowledge of the current in the capillaries, by watching the *motionless layer* in it. The existence of this layer was observed by Haller, Spallanzani, and others, but its importance was not appreciated by them. From M. Poiseuille's observations, confirmed and extended by E. H. Weber, Gluge, Wagner, and Ascherson (who has seen the same appearance in mammalia), it appears that the stream of blood flows most rapidly in the axis of the capillary vessel, and that its velocity gradually diminishes towards the circumference, till, in immediate contact with the walls, there is a layer which is perfectly still. The breadth of this layer, which is the simple result of the adhesion of the blood to the walls of the vessels, is usually  $\frac{1}{2}$  to  $\frac{1}{10}$  of that of the whole stream, and is the greater the slower the general current is. Its existence, and the different relations of the other parts of the stream, are discerned by the observation of the blood-corpuscles. The perfect ones commonly occupy the middle of the stream, surrounded by the lymph corpuscles, which move ten or more times slower than those in the axis stream. These corpuscles again are surrounded by the motionless layer, into which if any globules are forced, they move very slowly, and if they come near to the wall, remain for a time quite stationary.

The fact that the purpose to which the capillaries are habitually subservient, is only the passive one of conveying blood close to those parts of the body which either grow or secrete, renders the vascularity or non-vascularity of a tissue a matter of less interest than it used to be; for it is proved that if a part be only able to imbibe the fluid portion of the blood from an adjacent vessel, it nourishes itself as completely, and after the same method, as one whose substance is traversed by numerous capillaries. The extra-vascular tissues, as they are usually called, that is, those in whose substance neither injection nor the microscope has yet revealed any blood-vessels, and which derive their nutritive materials from the blood flowing in adjacent tissues, are the crystalline lens, epidermis, epithelium, and all forms of cuticle, hair, nails, enamel, and dentine of teeth, and the analogous structures of feathers, hoofs, &c. To the list of vascular tissues, the microscope and the improved art of injecting have added the cornea, the anterior part of the capsule of the lens, the membrane of the aqueous humour, the hyaloid membrane, the articular and other cartilages, the tendons, the elastic tissue, and even the densest bones.—*Ibid.*

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*Report of the Result of the Operation for the Cure of Strabismus in a hundred Patients*, by J. B. Estlin, F. L. S., Surgeon to the Dispensary for the Cure of Complaints in the Eyes, Bristol.—It would lead me beyond the limit of the time allowed for reading this memoir to enter upon the various modes of operating in separating the recti muscles of the eye from their insertion into the globe; it will only be necessary for me to state the operation which, after the trial of

others, I have usually practised in the cases that will be referred to. It is essentially that recommended by Mr. P. Bennett Lucas of London. A perpendicular slit (supposing the patient to be in a sitting position) is made through the conjunctiva, about half an inch distant from the cornea; a small blunt hook is introduced through this conjunctival aperture beneath the muscle, and its union with the globe separated by the same scissors which have been used for cutting the conjunctiva. The only instruments I employ are, a pair of small round-pointed forceps, for taking up the conjunctiva, Lucas's blunt hook, and a strong pair of scissors, either straight or angular, for making the incisions. The hook recommended to be inserted into the sclerotic coat, for the purpose of fixing the eye, I have never ventured to use; it appears to me to be a dangerous instrument with an unsteady patient, a coarse and unnecessary one for a firm patient, and one which is discreditable to the surgery of the present day. Excepting in some very unusual circumstances, or by way of experiment, I do not employ specula, or instrumental methods of separating, and holding the lids, trusting them entirely to the fingers of an assistant. An experienced assistant is certainly desirable, but I have repeatedly operated with no other aid than that afforded me by a female servant. I cannot believe that surgeons much accustomed to the ordinary operations upon the eyes will, in general, be found to have recourse to instruments for steadying the ball and lids while dividing the muscles for the cure of strabismus; such instruments greatly add to the pain of the patient, and in this way, I think, often tend to render him irritable and unsteady during the most difficult part of the operation.

The after treatment I have adopted has been, to bind up the eye immediately after the operation, but to remove the bandage in a few hours, without replacing it; to insist upon the patient's going to bed, and remaining there for at least twenty-four hours; the free application of warm water to the eye every six or eight hours; low living for a day or two, and the avoidance of occupation so long as any uneasiness of the organ is occasioned by it. Under this plan I have never seen any unpleasant symptoms follow, and have scarcely ever had occasion to employ any remedies. The patients have usually recovered in about a fortnight; sometimes a small piece of loose fungus has required to be snipped off with scissors, but I have not found this to occur more frequently than once in eight or ten cases.

The rule I have usually adopted has been, to operate first upon the eye which squinted most, and to be regulated by the progress of the operated eye, and the direction ordinarily assumed by the other, as to an operation upon the second eye. Often an interval of many weeks may pass with advantage before the second eye is operated upon; and if the eventual success of the operation were alone to be consulted, I should generally pursue this plan of waiting, as I am often able to do in private practice; the necessity, however, of speedily accomplishing the cure, especially among the poorer classes, requires prompt proceeding; and in all patients where I see the operated eye resuming its accustomed mal-position, or the other looking ob-

liquely within a week of the first operation, I never hesitate to recommend the division of the muscle of the eye not operated upon.

Of the 100 patients, 39 were males, 61 females; their ages were as follow:—

				Cases.
From 5½ years to 10	.	.	.	13*
„ 10 „ 15	.	.	.	17
„ 15 „ 20	.	.	.	23
„ 20 „ 30	.	.	.	26
„ 30 „ 40	.	.	.	10
„ 40 „ 50	.	.	.	5
„ 50 „ 60	.	.	.	5
„ 62 „ —	.	.	.	1
				100

Of these, 92 were affected with convergent, or internal strabismus, and only 8 with divergent, or external squint.

In 39 patients the left eye was the subject of operation; in 32 the right; and in 29 both were operated upon.

In 5 of this number it was necessary to repeat the operation a second time upon the same eye, and one of the patients, a young gentleman of fifteen years of age, required to have both eyes operated upon twice.

The following is a concise statement of the results.

		Cases.
Perfect or satisfactory	.	65
Satisfactory, but no late report	.	9
Improved, but requiring an operation on the second eye	.	7
Not improved, but requiring an operation on the second eye	.	4
Improved, but unfavourable cases	.	5
Much improved	.	5
Slightly improved	.	3
No improvement	.	2
		100

Mr. Estlin conceives that there were not more than five failures in the 100.—*Provincial Med. Journal*, July, 1842.

*Successful Amputation at the Shoulder Joint.*—Wm. Saville, 45 years of age, a healthy man, of stout frame, temperate habits, but of sedentary occupation, was admitted into the County of Louth Infirmary, under the care of Dr. Bruncker, at half-past three o'clock on Monday the 21st of February, 1842. While in a boat on the

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\* I have uniformly declined performing the operation upon children so young as not to be anxiously desirous of submitting to it.

river, about two o'clock, he received a dreadful wound in the left upper arm, a gun, which he incautiously handled, having gone off, the muzzle being close to his arm. The loss of blood, at the moment of the accident, was described as very profuse, but at the time of his admission, had almost entirely ceased, there not being then more than a slight oozing, of apparently venous blood. Though able to sit up, and even walk, he was very faint, pallid, cold, and shivered violently. Pulse scarcely to be felt at the right wrist, none could be distinguished at the injured side, the whole extremity being cold, and devoid of feeling. He did not appear to suffer very acute pain, except when the wounded arm was moved. It was manifest, from the nature and extent of the injury, the humerus being shattered, from within two inches and a half of its head, to very near the condyles, the integuments and muscles being destroyed to nearly the same extent (though fortunately, sufficient of both was spared to admit of ample flaps being formed), that amputation at the shoulder joint would afford the only means of saving the patient's life. My first efforts were directed with a view to restore sufficient reaction. The patient was placed in a warm bed, near a fire, and was liberally supplied with wine, of which he took several ounces before the circulation became sufficiently energetic to permit of the operation being attempted. When this desirable effect was at length produced, at five o'clock, as it was deemed imprudent to remove the patient from his bed to the operation-room adjoining the ward in which he lay, arrangements were made to perform the operation without further disturbing him. Having procured the able assistance of my friends, Doctors Flanagan (4th Dragoon Guards), Gartlan, and Browne, the patient was supported in the half-sitting posture, and the arm raised as well as its shattered condition would permit. As soon as the circulation was commanded, Dr. Flanagan making pressure on the subclavian artery against the first rib, with my left hand I took hold of, and raised the deltoid muscle and integument covering it, and then introduced at the posterior margin of the axilla, a long, straight, double-edged knife, directing it forward under the acromion, across the outer side of the neck of the humerus, until its point appeared through the integuments at the anterior margin of the deltoid, opposite its point of entrance. The external flap was now formed, by bringing the knife downwards along the outer side of the humerus, to a sufficient extent, and then cutting out. This flap was raised, the joint opened, and the head of the humerus disarticulated, which was not accomplished without some difficulty and delay, owing to the shortness of the upper fragment of bone not affording a sufficient lever. As soon as this was effected, the knife was passed behind the head of the humerus and brought down along the inner side of that bone, to the same distance as on the outside, and the inner flap formed. The hæmorrhage on the division of the deltoid muscle, &c., in making the outer flap was very trifling, and as soon as the limb was separated by the formation of the inner flap, the axillary artery was compressed

by Dr. Browne, who followed the knife with his hand, and immediately secured by a ligature; only one other artery required to be tied. The pressure was now removed from the subclavian, and the cavity carefully examined, but no vessel requiring a ligature could be discovered. There could not have been more than two ounces of blood lost during the operation. The flaps were carefully approximated, and the edges of the wound kept *in situ*, by several points of suture and isinglass plaster in the intermediate spaces. The patient became slightly faint when the wound was nearly dressed, but quickly recovered on being placed in the horizontal posture.

Nine o'clock, P. M. Patient is very tranquil, though he says he has had a good deal of pain in the shoulder. Pulse quick, but of sufficient strength.

Tuesday Morning. Had very little sleep during the night, which he attributed to severe pain and starting of the shoulder. Countenance placid, not flushed. Pulse 110, of good strength; no morbid heat of skin. Tongue moist and white. Bowels acted once during the night, evacuation costive. He was ordered an emollient enema, and afterwards half an ounce of castor oil. Diet to consist of tea, whey, and barley water.

Wednesday Morning. Bowels acted freely during the evening, but the evacuations were very foetid, and dark coloured. Had some refreshing sleep, though occasionally suffering from severe pain and starting of the shoulder. Pulse 120, of moderate strength; skin moist; tongue soft; thirst not urgent; the outer bandages were saturated with reddish serous fluid from the wound; they were therefore removed, when the edges of the wound were observed to be free from inflammation, and in close apposition. No excitement has as yet occurred to require depletion. He was ordered Pil. Hydr. gr. v. in the evening, and a draught containing one-third of a grain of Acetate of Morphia, if necessary, and in the morning Ol. Ricini ʒss.

Thursday. Had some refreshing sleep. Pulse 104, soft, and of moderate strength. Pain of wound and starting diminished. Tongue clean. Thirst not urgent. Skin soft and moist. Bowels have been freely acted on with the assistance of an enema. Secretions healthy. The dressings were removed, and a moderate quantity of well formed pus was gently pressed from the anterior part of the wound, the lips of which were, generally, in close apposition, and only slightly inflamed.

After the operation the patient went on remarkably well; on the twenty-second day both the ligatures came away; and on the 2nd of May W. S. left the hospital in very good health. On Tuesday, the 10th of May, he came to the hospital to shew something, which he said came out of the place where the granulations existed, and on examination, I found it was the cartilage of the glenoid cavity. It was evident that the presence of this mass kept up the discharge, and prevented the small portion of the wound above described from healing.

*Successful Transplantation of a Sheep's Tooth in the Socket of one of the Incisors of a Child*, by Robert Twiss, M.R.C.S., Castle Island, Kerry.—On the 24th of April, 1841, after having extracted the remainder of a broken front tooth from Maria Godfrey, a young lady, aged twelve years, I put in its place the front tooth of a yearling sheep, reeking from the jaw of the living animal, having previously shortened its root about a quarter of an inch. After the first week, during which there was little promised success (the tooth being much too small for the space, and the child not attending to directions), it became more and more firm, with every indication of its having taken root; and by accurate measurement I find it has enlarged, but not so much as it would have done in its pristine state, a circumstance observed in transplanted trees.

Mr. Twiss was led to select the sheep, on account of the extreme cleanliness of this animal, and the beauty and aptitude of the teeth for the purpose. He recommends that teeth be taken only from sheep two or three years old, as at that age they are about the size of adult human teeth, and they are more likely to grow when transplanted. The root, he observes, may be shortened or pared, if necessary, to fit in its new situation. The new tooth may be kept *in situ* by waxed silk ligatures.

*Case of radical Cure of Hernia*, by P. Bennett Lucas, Esq.—Some years since I was introduced to a medical gentleman, who arrived in this country from America, furnished with numerous testimonials from Professor Pattison and others, in support of his pretensions to cure hernia by the application of trusses. I witnessed some cases in which he certainly succeeded, and others which received no benefit from the means he employed. I was, however, so fully satisfied of the utility of his plan of proceeding, and that it was founded upon correct views of the animal economy, that I did not hesitate to apply a similar method of treatment to two cases of oblique inguinal hernia.

The subjects of both these cases were young men, one aged twenty-six years the other thirty years. In the elder of the two the treatment failed, but was productive of no bad consequences. The case of the younger forms the subject of this paper.

Mr. A. B., aged twenty-six years, was vaulting into his saddle, when he felt a slight and sudden pain in his right groin, which extended down the outer side of his leg, and was accompanied with the sensation of something having given way. These feelings subsided in a few minutes, and he continued his ride as usual. On his return home he observed a small tumour in his groin, which he considered of so little moment that he continued his daily avocations for a month, and these were the contrary of inactive, before he applied to me.

When he was made acquainted with the nature of his disorder, he suffered great mental anxiety; from the apparent hopelessness of his ever being cured; and being a young man of some property, and an attractive person, and unmarried, he felt the necessity of wearing a truss, with as uneasy a mind as he did the danger which hourly

attended his not doing so. At this time the tumour, which was a well-marked, oblique, inguinal hernia, protruded at the external or anterior abdominal aperture for more than an inch, and was reduced with the utmost facility. It was an enterocele.

A truss of ordinary construction was applied in the usual manner, and at the end of a year the hernia was still present, protruding as usual when the truss was removed, and when the patient made any respiratory effort.

In this condition of affairs, it was proposed to endeavour to effect, by pressure, a consolidation of the tissues in the immediate vicinity of the posterior inguinal aperture, and thus to present a barrier to the protrusion of intestine. To the accomplishing of this end a truss was applied, which presented these peculiarities:—Its spring was powerfully strong, and its pad, or rather, what corresponded to this piece of the ordinary instrument, was made of box-wood, and was conical, but blunted at its apex. The hernia was reduced; a silk handkerchief, folded three or four turns, was applied over the posterior abdominal aperture, and, with the handkerchief intervening, the truss was applied, its wedge being accurately fitted to the opening.

The curve of the truss did not consist of a single solid arc of steel, but of several plates of this metal, so that the amount of pressure could be regulated according to the feelings of the patient, by the removal of one or more of these springs.

This instrument the patient wore day and night for two months. At first he experienced some inconvenience from the firm pressure against the abdominal wall, and two of the steel curves were removed; after wearing the instrument in this degree of force for a few days, the removed arcs of steel were replaced, and at the end of six weeks the hernia ceased to descend.

A truss of ordinary construction, exerting little pressure, but rather support, and with a soft, flattened pad, was worn by the patient for some months. I hear occasionally from him; he tells me that he has left off his truss for more than a year, is married, and remains free from the disease.

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*Expectoration of a Portion of Lung.*—Dr. Jöel, of Berlin, has described in the January Number of Hufeland's Journal, a remarkable case of tubercular consumption, in which a piece of lung three inches long, and one and a-half broad, was expectorated. The patient lived for many weeks after. That the substance expectorated was really pulmonary, was proved by a microscopic examination of its texture, made by the celebrated physiologist, J. Müller, Professor in Berlin. A bronchial tube was attached to this piece of lung, of the thickness of a moderate goose-quill, and exhibiting two of the cartilaginous rings peculiar to the bronchial tubes. It is preserved in the Royal Museum of Berlin, and the pathologists of that city are of opinion that it was separated from the lung by means of sinuous ulceration. We believe that this fact is unparalleled.

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*Novel Method of applying Cold.*—Mr. Hardy next read a paper "On an easy and effectual Method of applying cold to inflamed

Parts," which had been presented by Dr. James Kendrick, jun., of Warrington. The Doctor had sustained a fracture of the right patella, which was followed by very severe inflammation of the knee. Leeching to a great extent and hot fomentations were had recourse to, but the latter afforded no relief. Cold applications were, therefore, substituted in a variety of forms, but they proved "insufficient to moderate the pain and heat of the knee." "In this emergency, it occurred to him that benefit might be derived by quickening the evaporation from the part by the continued motion of a large fan. The almost instantaneous relief which was effected by this means was evident even to the attendants, and still more gratefully" to himself. "From that moment until the period arrived when the suitable bandages could be placed on the knee, it was the sole remedy employed." "Nothing" (the Doctor stated) could be more simple than the method of its application. A double fold of fine linen soaked in cold water, and wrung as dry as it can easily be effected without handling it, so as to take off its coldness, is stretched closely on the inflamed part, and a large fan immediately whisked over it in different directions, and with as great rapidity as the urgency of the symptoms may require. When properly done, the effect upon the inflamed part is beyond belief salutary. The temperature rapidly sinks, and may be brought so low as to affect the hand of one who touches the ailing part with a sensation of icy coldness. To his own feelings, the rapid motion of the fan could be carried to an extent perfectly insupportable, from the actual pain, accompanied by nausea and extreme depression, which was induced by the great reduction of temperature." The cases in the Doctor's own practice, which afforded him opportunity for a trial of the remedy, had been but few. "In two cases of inflammation of the membranes of the brain, occurring in children, and in a third, where effusion had already taken place, he had employed it with striking benefit; and in a case of strong convulsions supervening upon apoplexy, he also considered it to have been, after bleeding, the most efficient remedy resorted to." The Doctor believed "that its application to the head would, in a short time, subdue even the most violent maniacal paroxysm, more especially if, instead of simple water, the evaporating lotion were employed. The blast from a small pair of bellows would probably render the effect still more powerful." He also believed it to be capable of affording all the benefit derivable from the cold dash, so strongly recommended by Dr. Abercrombie in affections of the head, but, like it, would require to be used with caution, from the powerfully sedative effect which must follow its continued employment." After pointing out a variety of other affections in which this novel remedy may prove efficacious, and also some of the advantages which it possesses from its greater cleanliness, and the ease with which it may be employed, the Doctor concluded his paper by saying, "I have to regret that the instances in which the remedy has hitherto proved useful are but few in number. This, however, is a necessary consequence upon its limited trial. I can only repeat, that it has answered my expectations wherever it has been resorted to. It will afford me much gratification to find that the brief and incomplete notice which I have brought before the Association has been the

means of procuring it a more extended trial in the wards of an infirmary or lunatic asylum. In either of these its merits or defects would in a very short time be fully demonstrated."—*Provincial Medical Journal*.

*Sore Nipple*.—Many of our readers have doubtless experienced how very troublesome and difficult of cure the sore nipple is. Mr. P. H. Chavasse, of Birmingham, states, that in consequence of the recommendation of a correspondent of the *Lancet*, Mr. W. Farr, of the General Registrar Office, he tried the tinct. of catechu with the most satisfactory results; and he looks on it as the best application he ever tried, and never failed to effect a cure after a few applications. He directed his patients to apply it with a camel's hair brush every time after the child had been suckling, the nipple having been previously dried.

*On Benzoic Acid in Urinary Disorders*, by John Smith Soden, Surgeon to the United Hospital, Bath.—As the regulations of the district branch societies require that communications at these meetings should be chiefly of a practical nature, I shall merely call the attention of the members to a remedy that has been lately recommended for the relief of irritable bladder, and state my own experience of the efficacy of benzoic acid in cases of that description.

In the last volume of the *Medico-Chirurgical Transactions*, there is a paper by Mr. Ure on gouty concretions, in which he states that most unequivocal proofs have been afforded him of the efficacy of benzoic acid in correcting and removing certain disordered states of the urine in individuals prone to attacks of gravel. In the "*Provincial Medical and Surgical Journal*," of February 26, 1842, Dr. Walker, of Huddersfield, published an account of the advantage he had witnessed from the use of benzoic acid combined with balsam of copaiba, in certain affections of the urinary organs. Dr. Walker's statements induced me to adopt his practice, and the first favorable opportunity of testing its efficacy occurred a few days after I had read Dr. Walker's paper, when I was summoned to an elderly gentleman who had long suffered from irritable bladder and enlarged prostate. Three years ago I saw this patient on account of retention of urine. I was then informed that, for a considerable time, he had had frequent inclination to pass urine, though able to void only a small quantity at each call, and that the urine was generally loaded with mucous secretion. I found enlargement of the prostate, but had no difficulty in passing a catheter; I emptied his bladder, and the urine drawn off contained a considerable quantity of muco-purulent deposit. The catheter was passed daily, and the bladder washed out with warm water; the hip-bath, with rest, and the means ordinarily adopted in such cases, soon mitigated the severity of this attack. The patient acquired the power of introducing the catheter himself, and has used the instrument, I believe, daily ever since that period. I occasionally felt the instrument strike against a calculus, but the state of the prostate, and advanced age of the individual, rendered an operation unadvisable. During the last three years he has taken most of the

remedies generally recommended on such occasions, and thinks the uva ursi has been most serviceable to him. He had not, for a long time, been under the care of a medical man, but trusted entirely to his own management, till I was sent for in March last in consequence of aggravation of suffering. He showed me the urine he had recently passed and drawn off. It deposited a large quantity of muco-purulent discharge. He complained much of the irritability of the bladder. I injected warm water, and as, on former occasions, he had derived more benefit from the exhibition of uva ursi than from any other remedy, I prescribed that medicine, together with the use of the hip-bath, and a suitable regimen; as no material relief ensued at the end of three days, I directed the benzoic acid in the following form:—

Benzoic acid, one drachm;

Balsam of copaiba, half an ounce;

Yolk of egg, enough to form a mixture with seven ounces of camphor mixture. Two tablespoonfuls to be taken thrice a-day.

I never witnessed anything equal to the efficacy of the medicine; the urine became clearer after the first dose, and in two days it was perfectly free from mucous deposit; the irritability of the bladder was lessened, and in four days the patient resumed his self-management. I did not feel the calculus during this attendance. The gentleman left Bath about six weeks after this period. I saw him a few days before his departure; he told me that he was as well as usual, that he continued to use the catheter, but that the urine was quite clear, and that when he observed any tendency to mucous deposit he had recourse to the mixture, and always with success.

The result of this case induced me to give the medicine a trial at the United Hospital, and our intelligent house surgeon, Mr. Morgan, has been kind enough to give me the heads of four cases in which it has been exhibited at that institution.

CASE I.—A man aged thirty-five, applied for admission as an out-patient, complaining of frequent desire to make water, which has existed for the last month; the urine deposits mucous sediment; the patient has no gonorrhœa, and refers his disorder to being much exposed to cold and wet. On passing a catheter the urethra was found perfectly natural, but there was some slight hæmorrhage after the urine had been evacuated; has some pain in the loins; pulse is rather strong; was at first cupped on the loins, and ordered aperients; and then diosma and then the pareira brava, with opiates, were given in succession. After having attended for three weeks, he complained of some pain in the joints, for which he was ordered colchicum, and though it greatly relieved the rheumatic affection, produced no beneficial effect upon the state of the bladder. Mr. Soden saw him, and directed the mixture, with benzoic acid and balsam copaiba. He found benefit after using it for two days, and in ten days was perfectly well.

CASE II.—A married woman, apparently in good health, was admitted as an out-patient, stating that she had frequent desire to make water; the urine depositing, on cooling (she says) a whitish sediment; urine slightly acid; she has been under medical treatment at intervals during the last six months, but without deriving any benefit from

the means adopted. The mixture, with benzoic acid and balsam of copaiba, was ordered immediately, and she was discharged, cured, in three weeks.

CASE III.—A man, aged fifty, has been under the care of two surgeons for a month, owing to having suffered from irritability of the bladder. Has now frequent desire to make water; a small quantity of blood is occasionally passed with the last drop of urine; some ropy mucus is deposited in the urine, which is slightly acid, though it very soon becomes ammoniacal on standing; there is some irritation at the glans penis; on sounding, no stone could be detected. He was ordered the benzoic acid mixture, but only continued his attendance for three visits (eight days), during which time great relief was afforded, and as he has not since applied at the hospital, he is most probably well.

CASE IV.—A man, aged thirty-seven, after a severe attack of gonorrhœa, which appeared, by his description, to have been attended with acute inflammation of the bladder, was admitted an out-patient. He complains of being obliged to make water very frequently, having to get up six or eight times in the night to empty his bladder; has much pain in front of the pubis; some ropy mucus is deposited in the vessel, after the urine has been standing some time. After trying several other remedies without advantage, the benzoic acid mixture was ordered, from the use of which he experienced great relief in two or three days, and at the end of ten days no mucus was discovered in the urine.

The most remarkable circumstance connected with the exhibition of this medicine, as far as my experience goes, is its decided efficacy in diminishing, and, in some instances, completely suppressing the muco-purulent deposition in the urine, which is so prominent a symptom in most cases of affection of the bladder. I am aware that a doubt may be very fairly entertained whether this effect is to be attributed to the benzoic acid, or to the balsam of copaiba, or to their combination. In the few cases which I have just related I was induced to give both these medicines, from the advantage which had been derived from their use in Dr. Walker's practice. It is, however, very desirable to ascertain the effect of benzoic acid alone in similar cases, more particularly as balsam of copaiba so frequently disagrees with delicate stomachs. I shall therefore not fail to avail myself of future opportunities of trying it, uncombined with other active ingredients; and the hope of inducing my brethren of the Association to endeavour to establish the real worth of a remedy that promises to be serviceable in a very formidable and distressing class of complaints, has been my principal motive in occupying so much of the time of the meeting.—*Provin. Med. and Surg. Journal.*

The sedative effects of the balsam copaiba on irritability of the urinary organs is so well known, that we should wish to see the benzoic acid tried alone before we decide on its merits.

*Detection of Sugar and Albumen in the Urine.*—An ingenious and simple apparatus has been devised by M. Biot for detecting the presence of sugar in diabetic urine upon optical principles. The me-

thod consists in ascertaining the action of the fluid suspected to contain sugar on polarized light, and we are assured that in this manner the smallest quantity of sugar may be instantly detected in the urine of a diabetic patient, and the progress of the disease and the effect of treatment thus ascertained with the utmost facility. The same principle may be applied also to the detection of albumen, the action on the polarized ray being in this case in a contrary direction, and M. Donné proposes also to determine by the instrument of M. Biot the presence of animal matters, not albuminous, in the urine, from the negative results afforded.—*Med. Chir. Review.*

*Scarlet Fever.*—In 1838, it assumed a peculiarly bad aspect. Though apparently of an inflammatory character, it could bear but little depletion, and the use of purgatives appeared particularly hazardous; under such a course of treatment life seemed to vanish,—so silently and rapidly did the vital powers subside. It appeared, in fact, in the early commencement of this epidemic, that all attempts to counteract its influence were baffled, and that death would ensue in spite of every effort. Latterly Dr. Streeten adopted Dr. Peart's plan of giving ammonia. Under its influence the patients appeared to cool, and express immediate relief,—indeed subsidence of the more urgent symptoms quickly ensued.—*Ibid.*

*Epilepsy* has in many instances been much benefited, and in some few entirely relieved, by a sustained exhibition of the valerian and hydrocyanic acid, together with the daily use of some slight tonic aperient, as rhubarb combined with soda. The effects of this treatment have been very striking.—*Ibid.*

*Remedy for the short-jointed Tape-worm.*—Dr. S. recommends the following formula: *R. Cort. radicis punice granati 3ij. aquæ lbij., macera per horas xxiv., decoque ad lbj., adde syrupi zingiberis 3i.* Two ounces of this to be taken every half hour until the worm is expelled. If the head become dizzy, which is not infrequent, after the fourth or fifth dose, it should be discontinued. It is quite necessary that the above should be made of the bark of the root, and not of the rind of the fruit: this latter appears to be totally inert as a vermifuge.—*Ibid.*

*Observations on the Hill Fevers of the Southern Peninsula of India; with some Remarks on Magnetism and Electricity as a probable Cause of Fever and some other Disorders,* by Dr. Heyne, Madras.—After enumerating the symptoms of the hill fever, Dr. Heyne observes, that the ordinarily received opinions as to the vegetable or marshy origin of fevers will not here hold, for that “the hills are here not more woody than in other healthy places; some indeed, where the epidemic of 1808 and 1810, as well as the endemic, were most destructive, are quite naked of trees, as Diudigal, Madura, and the rocks west of Seringapatam.”

“Now, if it should be found that this fever exists *constantly* and *invariably* among certain description of hills, when others of a dif-

ferent composition are as constantly free from the same, would it not become reasonable to suppose that the nature or composition of the rock itself must furnish the cause of the calamity?

"The hills where it is found to prevail, appear, at first view, to be quite harmless, as they are a *granite*, which is the most common rock-kind on this globe. They contain, however, besides *quartz*, *felspar*, and *mica*, a great proportion of *ferruginous hornblende*, which, by its disintegration or separation from the rock, becomes highly magnetic, and in which, I suppose, the cause resides which produces this fever, besides a great train of other disorders. This iron hornblende occurs in such quantity, that all rivulets, public roads, indeed, all hollows along these hills are filled with its *sand*; from which, also, all the iron in this part of the country is manufactured. This granite is remarkable for its disintegration, as it not only separates during the hot season in large masses of many tons, but crumbles as easily into its composing particles, and is found as sand in great abundance, not only near every rock, but near every stone, from whence it is carried by the torrents during the rains to the lower parts of the country, and thus forms the particular mark by which these hills may be distinguished from all others. It is generally not attracted by the magnet when united to the mass, even when it occurs as in hornblende state, or greenstone, in the greatest abundance, but after it has been separated it is attracted as much as any iron filings. This may be owing to the incipient state of oxydation, or more likely, to the development of magnetism by the high temperature to which it has been exposed in the hot season, which also may have weakened the cohesion of the rock, and caused its disintegration in the mass.

"Hills of this description form the principal ranges of the Ghauts, as far at least as the Godavery; they predominate also among the smaller, and in single hills and rocks in the low country, so that they might be taken for the exclusive rock formation of this country. However, fortunately, this is not quite the case. They are easily recognized at a distance by their very rugged and abruptly pointed appearance, and the great steepness at their tops. The ranges of this formation are also very interrupted, and generally consist of rows of single hills, although to the southward I have found them also connected at bases, and in triple and quadruple ranges."

Dr. Heyne then gives an excellent topographic description of the hills "which have rendered themselves known to Europeans for the malignity of the fever," and after that of such as are "*as constantly free of the hill fever.*" This is the right kind of topography, but for obvious reasons we cannot here enter into it. The hills where the fever is "totally unknown," Dr. Heyne describes as "*primitive trap*, which consists of *quartz*, *felspar*, and *REAL hornblende.*" He then adds that the epidemic fever of 1808 stopped short at a range of hills of this latter composition, in the Coimbatore district—a remarkable fact.

"These two ranges of trap proceed with very little or no admixture of iron stone through the whole Baramahal, from Namcul to Darampoory and Vellore; the rocks are sometimes compact horn-

blende and greenstone, or basalt, all belonging to the same formation; but here and there hills appear among them of iron granite, which stand in connexion with other ranges of that description in that province, both east and west of that valley, which have the hill fever as virulent as in other parts of the country, where whole ranges of these hills occur.

"A most remarkable instance illustrative of the above facts, and of my deductions from them, I found at Tripatoor, which lies in the above valley, close to a large table-land, the rock of which is sandstone. I asked there a respectable native whether any such disorders as fevers were frequent in the country, but received in answer, 'No, thank God, not within ten miles of this place; at Javadymalle, a hill fort, where no man can live two days without getting it.' To this place a peon was despatched with the simple order of bringing two or three stones from the rock of the hill, and some sand as might be found on the road. The man returned, and brought pieces of a rock composed of red felspar, quartz, and plenty of ferruginous hornblende; and the sand of the road consisted entirely of magnetic sand and particles of felspar.

"I must name now the Pulicat hills, among which, as far as they extend to the southward (Chittoor), the hill fever is totally unknown. I was particular in my inquiries on this subject, in the beginning of this year, when among them. They consist entirely of flinty slate, and are bare in some places as they are woody in others, and as lofty and as low as the granite hills.

"I come now to a country and hills where I have lived myself for some years, the Cuddapah district. It is divided from Gurromcondah on the South, and from iron granite and the hill fever, by a range of flinty slate. The same bends there to the northward, where the ranges thicken as they advance, and leave narrow valleys as far as Cummur, and further up the river Kishna. The whole or most of these hills belong to the clay-slate formation, some are calcareous, all however are free from the hill fever. Other fevers occasionally may be seen, such as simple intermittents and bilious remittents, but they do not, like the hill fever, run into a typhus, and the cautious may easily guard against and get rid of them.

"This is the largest extent of inland country which I know to be free of the hill fever, viz. from Cuddapah to Kishna near Chintapilly, a place that has been at all times dreaded for its fevers. There, the iron granite hills prevail again. To the westward of Cuddapah, the healthiness of the country extends to the Ganjecottah hills, which belong to the flætz trap formation, consisting of sandstone, limestone, jasper and hornstone pebbles cemented together, and which are perfectly free of magnetic ironstone.

"Bababüdden is another range of hills which is remarkably free of hill fevers, although it lies between places of notoriety for such, as Seringapatam to the S. W., and Chittledroog to the N. W., and Naggury to the W., an unwholesome country among the Ghauts. It belongs to the *clay-slate* formation, and *active magnets* are found in large depositions on them. It rains on them for six months in the

year continually, when plants keep fresh and alive in the open air for many days after they have been taken out of the ground, or broken off the stem. In fact, my observation, viz. that the hill fever on this coast exists *exclusively* among the hills of the granite formation, or where iron-stone is found in large quantities, will be confirmed, the more it is brought to the test.

"A principal question arises now, but which, and the answer to it, I presume will be anticipated by every medical man, viz. what can be the particular principle in that rock which should have so powerful an effect on the human frame? I readily ascribed it to the *magnetic* or *electric fluid*, which seems to exist in the greatest abundance in the iron hornblende, and is disengaged in great quantity in the hot season.

"The electric and magnetic fluids are modifications of each other—a principle now pretty generally admitted. It exists in the air, and that it does in the earth and in the minerals, need scarcely be mentioned, nor are the animal and vegetable kingdoms less indebted for its influence, indeed it is the *anima mundi*. It can be accumulated under certain circumstances in the air, and there is no doubt, that as in magnetism, so it is in iron, and in some other minerals; and as it is elastic, it can be also dissipated from the place in which it is confined. Of course where magnetic iron abounds, the electric fluid, whether in its positive or negative quality, will make, under favourable circumstances, its escape.

"This must be on common physical principles the case, *when the temperature is more than usually increased*; the hottest season, therefore, when the rocks exposed to the meridian rays of the sun are raised to the accumulated heat of  $220^{\circ}$ , is the epoch when the fever rages most (which we suppose to originate from the greatest development of magnetism). It is known that a high degree of electricity can be raised in certain minerals by heating them merely, and, according to my experiment, the hornblende which is found in this granite becomes magnetic on being heated, which before showed no magnetism whatever. It stands also to reason, that the first rain which cools the atmosphere down to  $74^{\circ}$  must put a stop to the discharge of that principle, and to the farther cause of the fever, for '*cesante causa tollitur effectus*.'

"It is generally believed, that so powerful a principle has, or must have a great influence on the animal constitution, although electricity has hitherto been tried, but with very partial success, as a remedy against some disorders; and if I am not mistaken, with more where it has been *abstracted*, where sparks have been elicited, than where they have been imparted. Magnetism has also been tried, but oftener ridiculed by the medical world in England, particularly that which is called animal magnetism.

"In my humble opinion, it is here the particular magnetism or electricity of the iron granite, without however attempting to determine whether it is the vitreous or resinous; for hornblende in primitive trap contains nearly as much iron as that of the granite; the iron also in other minerals, as in the magnetic iron slate of Bababudden,

and the carbonated iron ores of that country, possesses as much magnetism, even in its active state, yet do they not prove themselves in the least hurtful to our constitution, as that of the iron granite hills; of course if it be electricity at all (as it should appear) it must be that particular modification of it, which is inherent to the iron sand of the granite of this country.

"It has been observed by some practitioners (Mr. Scarman), that the night air in those places, where such fevers occur, is particularly to be dreaded. This seems to militate against the new doctrine, but is actually in support of it; for electricity, as is well known, can be confined to clouds for a considerable time, or can be kept at a certain spot by attraction (as in the *ignis fatuus*), and of course the same principle, under a different form, but from similar causes, may be kept floating in the air for some time at the particular spot where it has been discharged, and, if it should remain till night, it must be condensed by the coolness of it, and hence will be imparted, or come concentrated to those who expose themselves to it at the time.

"The natives are particularly fond of sleeping in the open air with a very slight or no covering, hence one cause of their being oftener subject to those fevers than Europeans.

"A moist atmosphere destroys electricity (to use the common phrase) or abduces it; it is therefore but natural, that the first strong rain in the season, besides the cooling of the rocks, should remove the sickness which is the consequence of it; on that account also, in a season prior to the hot (in January and February), the fever has been restrained by the same circumstance. The heavy dews, among our Ghauts, which some have even considered as the forerunner, or as a powerful cause of these fevers, have absolutely retarded or prevented them. For it should be known and remarked, that these months are reckoned the safest to venture among the Ghauts and to remain there."

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"It may be observed further, that all epidemics in this country are preceded by uncommonly heavy rains and some lightning; such was not only the case in the fever epidemy of 1808 to 10, as already said; but such existed before the appearance of the present cholera morbus in Bengal, and now at Madras. I do not suppose, however, that they are in consequence of the rain after it has fallen, and the inundations which have followed it, but from the superabundance of *electric* matter which caused the rain, or in fact from the *same cause* (electricity) derived from a different source.

"I would advise, as a precaution, to avoid if possible the living near a hill or rock about which a quantity of magnetic iron sand is found. The distance of two miles would be quite sufficient in common cases, as it has been observed even at Courtallum, where the village, that had suffered much from the fever, has been removed with the best effect to that very distance.

"I could now close my writing, as I have said nearly every thing which I know at present on the subject, but I will suggest a few

hints, which strike me will not inaptly come from me, although I am convinced they would soon occur to others, and would be most likely better expressed,

"It appears in the first instance to me probable, that electricity in general, is the principle which has most influence on our health, and on our life. We live in it constantly, it penetrates every thing, it is as a constituent of every thing, &c. &c. It may abound in some situations, it may be deficient in others, each of which must have peculiar effects; the positive or vitreous, the negative or resinous may predominate; either must have its *peculiar* influence. In the preceding pages we have seen what effect it has when it occurs in great quantity from magnetical iron stone (I believe the resinous), it is probable that it may have similar consequences from whatever other sources it may be derived. The fever in the Northern Circars, although it might not be owing to the electricity from the minerals of the country, may be to that of marshes, which may be easily ascertained; in its attacks, it seems to be like the hill fevers, particularly in its tendency to run into a typhus, or into enlargements of the spleen, &c. It appears to me also very certain, that the fever in fens of some countries, in the south of England, and the Walcheran fever are engendered in the same manner. I have for the latter supposition, at present no other proof but the frequency of the *ignis fatuus* in these situations (certainly but an electrical phenomenon), and the account of the fever itself, which seems to resemble our hill fever in many particulars, as do the marsh fevers of Bengal and Sumatra, which quickly run into a typhus, and affect the spleen violently. In further support of this opinion, I will say, that Abbé Nollet, or Dr. Wilson, or even the gentlemen of the medical committee, have long ago suspected that electricity, which we know to exist there in some abundance, must be the real efficient cause. That the different gases, as hydrogen and carbonic, or the deficiency of oxygen cannot be blamed, has been frequently demonstrated by eudiometrical means, which indeed have generally proved, that the air in the most unhealthy places is as pure and as full of oxygen as in the most salubrious situations. To conclude this subject, I must say, that in my humble opinion *all fevers* are in some degree engendered by a superabundance of electricity, either of the local situation or the habitude of the individual."—*Ibid.*

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*Treatise on a Case of Violent Dislocation of the second Cervical Vertebra, of seven Months' standing, reduced by a peculiar Method, being the ninth Treatise on the Deformities of the Osseous System, by Jules Guérin, M.D., Paris. Condensed from the French by S. Lenox L. Bigger, M.B., L.R.C.S.I., Dublin.*—The history of violent luxations of the vertebræ, particularly of the superior cervical vertebræ, is as yet involved in great obscurity. Observations on this subject in scientific works are as vague as they are incomplete. The general descriptions given arise from the insufficiency of particular instances. We hardly know what kinds of displacement the vertebræ can undergo; and so far from any precise arrangement of the kinds and

varieties of these displacements, it is with difficulty that the characters which distinguish these accidents from fracture can be given. The particular case here given is not sufficient to establish the bases of this distinction, but it may serve to show the precision which it is indispensable to apply in distinguishing particular cases, when the object to be desired is the framing of an accurate treatise on this order of lesions and their suitable treatment. The case here given forms but one item in this history, and has no other end than that of presenting a well marked example of a certain variety of luxation of the second cervical vertebra, showing its characters, the mechanism of its production, and the treatment which ought to be applied.

The case is as follows:—Amelie L., æt. 10½ years, born at St. Quentin of healthy parents. She has three brothers in good health. Before the accident which caused her deformity, Mademoiselle A., with the exception of some infantile diseases, had been in the enjoyment of good health. She was of a delicate constitution, lymphatico-nervous temperament, had brown eyes, light hair, and a fair freckled skin.

On the 23rd May, 1839, she fell and struck her chin heavily upon the pavement. The immediate result of this fall was a contused wound of the chin, which was very painful. The little girl's recollection was not sufficiently exact to enable us to know whether the accident was immediately followed by pain in the neck. It is possible too that such pain might have been masked by the violence of that of the chin. The next day but one after the accident, pain in the neck was complained of. It appears on the same day the head began to bend to the left, and to turn to the right. The pain was excessively acute during two days, originating in the superior cervical region of the spine, and radiating thence into the soft parts of the neck, and principally into the muscles of the left side of the nape. The deformity following at first a slow and gradual progress, appeared suddenly to be increased to a very considerable degree on the fifth day after the accident, and the pain was appeased. Efforts were made to alleviate the first symptoms by antiphlogistic means, leeches, cataplasms, diet, and repose. Frictions were made with a narcotic ointment. Later attempts were made, but without success, to restore the head to its position with the hands, and to preserve it so with bandages.

After five months of useless attempts, her family submitted the little Amelie to the examination of many surgeons of the capital. MM. Marjolin, Sanson, and Bouvier consulted separately, gave their opinions in writing; MM. Marjolin and Bouvier recognized the dislocation, though in a different manner; they agreed in rejecting every kind of attempt at reduction, declaring such to be useless and dangerous. M. Sanson was not so explicit in speaking of the nature of the injury; he found the case puzzling, but advised the trial of orthopedic means.

We give in full the consultations of these three practitioners, as they must be introduced into the discussion which follows, and we feel it our duty to report them *verbatim*.

*Opinion of M. MARJOLIN.*

"I have examined Mademoiselle A. Her face is turned to the right side. The right side of the neck appears shorter than the left.

"The spinous process of the second vertebra is not situated in the mesial line, but is placed six or eight lines to the right of it, and forms a considerable prominence.

"The whole right side of the chest is contracted, and respiration at this side is feebler than at the left.

"There are evidences of the second vertebra of the neck being luxated, either immediately in consequence of the fall, or consecutively; and I fear, consequently, that this torsion of the neck cannot be remedied either by orthopedic means, or by section of the sternomastoid muscle.

"As this case presents difficulties of diagnosis, I should wish the young lady to be examined by Doctor Bouvier, Rue Basse, Saint Pierre.

"The slight curvature which the spinal column exhibited in the dorsal and lumbar regions is of little importance, and I think it will only be necessary to follow a strengthening regimen, and to cause the right arm to be more exercised than the left, in order to cure it.

"The contraction of the right side of the chest has probably been caused by a latent pleurisy followed by effusion, which has been afterwards absorbed.

"If M. Bouvier think, as I do, that luxation of the second vertebra has occurred, it will be prudent to abstain from every attempt at reduction.

"The practice should be continued of making the young lady lie upon her back as recommended by her mother.

(Signed), "MARJOLIN.

"Paris, 12th September, 1839."

*Opinion of M. BOUVIER.*

"I think, as M. le Professeur Marjolin does, that no muscular contraction exists, and consequently no operation could remedy this wry neck. The cause of the deviation of the head results from a gradual dislocation of the second or third cervical vertebra, the transverse processes of which form a projection posteriorly, and probably also from a sinking of the opposite side of the vertebræ.

"This condition could not be treated by orthopedic means without danger, consequently I should advise that the only treatment to be used should be the supporting of the neck with a pasteboard collar, in case the weight of the head should become inconvenient, and above all, that Mademoiselle A. should frequently lie on a reclining board.

"(Signed), DOCTOR BOUVIER.

"Paris, 12 September, 1839."

*Opinion of M. SANSON.*

"The diagnosis of the affection presented by Mademoiselle A. appears to me embarrassing. On one hand, there are alternate curvatures of the spine, as in rachitis. On the other, there is torsion of the

neck and inclination of the head as in wry neck, or in certain dislocations of the spinal processes of the superior vertebræ.

"I do not find that rigid tension of the muscles which usually causes wry neck, although, according to the patient, these muscles were painful during the first days which succeeded the accident.

"I find a considerable projection, with displacement of the spinous process from its axis.

"In fine, the nature of the cause, the suddenness with which the head deviated after the fall, the sharp prominence formed by the spinous process of the second vertebra, not in the sub-occipital fossa, but to its right, whilst the head is inclined to the left without any tension of the muscles; the difficulty, nay, the impossibility of the movements of rotation of the head, taken all together, cause me to incline towards the opinion, that we have to do with an incomplete luxation of the superior vertebra, rather than with an ordinary wry neck, or rachitic curvature of the spinal column.

"I think, however, that on account of the obscurity of the diagnosis, mechanical means, directed with circumspection, might properly be applied.

"5th November, 1839."

"(Signed), L. SANSON."

Six weeks later little Amelie was brought to my consultation. I asserted that luxation existed, and gave an opinion contrary to those of MM. Marjolin and Bouvier, as to its reducibility. Finding myself opposed in opinion to so high an authority as that of M. Marjolin, and to an opinion so special as that of M. Bouvier, I called a consultation, at which I showed my reasons before commencing treatment. M. Lisfranc was asked to give his aid to the family physician; and both joined in my opinion on the nature of the lesion, and on the fitness and propriety of a slow and gradual attempt at reduction.

The condition of the patient on the 15th November, 1839, that is to say, six months after the fall, was as follows:

She exhibited a dislocation of the second cervical vertebra upon the third, accompanied by the following characters:

1st. Inclination of the head to the left, with rotation to the right.

2nd. Inclination of the cervico-dorsal region in the opposite direction to the inclination of the head, and consequent carrying of the head altogether to the right of the axis of the trunk.

3rd. A tumour formed in the right posterior superior cervical region by the transverse process of the axis; a marked depression of the opposite side of the neck. Examined anteriorly, the head has an inclination to the left, so that its longitudinal axis cuts its vertical in an angle of about twenty-five degrees. This inclination is accompanied by a rotation of the face to the right, so that, when any one stands opposite the body, the face appears in three-quarter profile.

Examined on its posterior aspect, the vertebral column presents a lateral deviation, with three curvatures, of which the two inferior disappear when she lies down on a horizontal plane; the superior, bounded by the cervical region, is permanent. The inferior

curvature occupies the lumbar region of the column, its convexity turned to the right. It is only appreciable by the projection of the muscles on the right side. The middle curvature, discoverable by the direction of the spinous processes, has its convexity to the left. It comprises the whole dorsal spinal region, and shows itself by the fullness of the ribs on the left, and the depression of those on the right side. This curvature forms the segment of a very large circle, and is insensibly lost towards the superior dorsal region. In the cervico-dorsal region is perceived, and, above all, is felt a sudden inclination to the right of the cervical region on the dorsal. This inclination is so great, that the cervical column forms with the vertical an angle of about eighteen degrees. In fine, all the cervical vertebræ tend to form a curvature, the segment of a very small circle, convex to the right, the summit of which corresponds to the union of the second with the third vertebra. This curvature is accompanied by powerful torsion, which shows itself by considerable prominence of the muscles of the right side of the nape, and depression of those of the left.

At the apex of this curvature, and at the union of the posterior with the right lateral aspect (which has become almost posterior), a hard sharp tumour is both to be seen and felt, formed principally by the right transverse process of the axis, raised posteriorly, and carrying in the same direction the muscles which cover it. Such, after a close examination, appeared to me to be the state and the relations of the parts composing the cervical column.

The inclination of the cervical vertebræ is not very angular; it follows the middle curvature, but it is the segment of a much smaller circle. Although the cervical region exhibits a very marked curvature, there does not appear to be any depression on the left side of the vertebræ. It is probable there is no other lesion than a dragging and partial rupture of the ligaments which unite the second to the third cervical vertebræ, with fracture of the superior left articular process of the latter, for there is evident riding of one bone upon the other, causing a motion of rotation which far exceeds those limits permitted by the reciprocal surfaces, and which it would be impossible to effect without fracture of the above-named process; this rotation amounts to about the eighth of a circle (about  $20^{\circ}$ ). There are no symptoms of compression of the spinal marrow; to effect all this the fibro-cartilage, uniting the bodies of these two vertebræ, must have undergone considerable distention, if not ruptured to a greater or less extent. This distention has permitted the body of the axis to slip out of the cavity in the body of the third vertebra, and to pass a little to the right. This irregular rotation is accompanied by a marked inclination of the same vertebra forward and to the left side, a new proof of fracture of the articular process: because, did this fracture not exist, the inclination would have taken place in the opposite direction.

The summit of the spinous process of the axis can be easily felt, being placed to the left lower down than natural in the space corresponding to the middle of the vertebral channel of that side, in place of being in the same line with those of the vertebræ beneath it.

In consequence of the cervico-dorsal inclination, the head is displaced to the right of the axis of the body. This displacement may be reckoned at three centimetres. The muscles of the neck present the following dispositions: those of the superficial anterior region offer some appearances of spasmodic contraction; their tension cannot be regarded as a passive effect of the displacement of the head and neck. Thus the sterno and cleido-mastoid muscles of the left side are stretched, and oppose some resistance to the raising and throwing back of the head; those on the right side are equally tense, but their tension is the result of the elongation which they have undergone, in consequence of the displacement of the head in the direction contrary to their action. The *scaleni* muscles appear to be engaged more directly in the production of the consequent deformity, at least those of the right side, which are strongly contracted, hard to the touch, and difficult of extension. They appear to be the principal agents in the cervico-dorsal inclination to the right. The *trapezii* only appear to be affected in a passive manner; in consequence of the inclination of the neck, their cervical fibres have undergone change of direction. Those of the left trapezium are almost horizontal; those of the right trapezium approach nearer to the vertical. The *splenius* and *complexus* contribute to the deformity in a more decided manner; to the right they are elevated posteriorly, particularly the *complexus*, their tension is sufficiently great, but it appears to be passive. To the left they are depressed, but still more distended than at the right side: they form the cord of the cervical curvature. It is impossible to find out the state and condition of the transverse cervical spinal muscles, the minor oblique posterior muscles, and of many other of the smaller muscles, both anteriorly and laterally; but it appears evident to me that some of them are the active cause of the displacement of the second vertebra.

Being assured by different circumstances of the accident and its consequences, that the case was one of traumatic and muscular dislocation of the second on the third vertebra, I began to think of attempting the reduction of this luxation. It appeared possible, for reasons which I shall give, to employ opposite means to those which nature had taken to produce the accident, in order to restore it. The luxation had been caused consecutively to the distention of the ligaments, and to the rupture of the articular surfaces by the action of spasmodic contraction of the muscles of the left side of the neck. I thought that by placing the cervical column and the head in a condition in which the muscles opposed to those which had caused the luxation might act in their turn in a more active manner, that I should be able, by their aid, to bring the dislocated vertebra into its natural position. To effect this, it was necessary at first to overcome the spasm of the contracted muscles. I accomplished this first step by the use of frictions, with tartar emetic ointment, on the left side of the neck, and by extensions, accompanied by kneading and percussion of the contracted muscles. This having been continued for some days, the inclination of the head had diminished by three quarters, whilst the displacement backwards of the second vertebra re-

maintained as before. This first result only confirmed me in the idea, that muscular contraction had been the mechanical cause of the luxation, because efforts at extension occasioned on one side very great pain, and on the other the muscles strongly resisted the head being brought into its place. After this practice had been pursued five or six days, I had almost fulfilled the first step; I had straightened the head. The second remained, viz., the replacement of the luxated vertebra. This second part of the treatment was effected in the following manner:

The shoulders of the child being kept fixed and perfectly horizontal, I pressed with both my hands on the middle and projecting-portion of the neck, in a horizontal direction, from right to left, whilst an assistant held the head raised, and gave it a motion of rotation from right to left. This manœuvre effected the elevation of the cervical column, which was inclined to the right, and, by being carried to the left, distanced the superior points of insertion of the trapezium, of the scapuli, and of the angularis scapulae, by drawing on these points. From the commencement of our attempt, I observed that the projection caused by the transverse process of the second vertebra sunk in a marked degree. I followed the same plan three times a day; in the intervals I placed the patient on the bed I use for the extension of wry neck. After eight days of this treatment, the vertebra was enabled to recover its normal position, but it did not preserve it perfectly. After each sitting the osseous projection was almost entirely effaced, but under the influence of muscular contraction it soon reappeared, each time less and less marked. This circumstance, which was, doubtless, caused by the fracture of the articular process of the left side, and by the considerable elongation of the articular capsule and of the surrounding ligaments, showed me frequently, although in a slight degree, the mechanism, by means of which the luxation had been produced the first time.

The consecutive treatment consisted in the application of a bandage, similar to that which I employ in cases of chronic wry neck after section of the muscles; a cap and linen bandages sufficed to hold the head obliquely, and in a direction contrary to its inclination and its recent diseased rotation, and straps obliquely applied to the cervical column were so placed as to correct its curvatures.

The raising of the head and the maintenance of the reduced vertebrae in its proper place, were not perfectly effected till this treatment had been continued three months. During this interval, and even after the cure, some appearances of contraction, slight indications of the true origin of the luxation, were to be observed in the sterno and cleido-mastoid muscles, and in the left scalenus.

To-day, five months from the beginning of the treatment, two months since the cure, the parts have remained in their proper positions, the head and neck executing, very nearly, their habitual movements; there is only a little uneasiness in turning the head to the left, produced by a remains of the retraction of the sterno-mastoid muscle. There exists also a very slight projection of the right side on the left side of the nape, resulting from a trifling remains of elevation of the right transverse process of the luxated vertebra.

This case, interesting for many reasons, having given rise to different versions, with regard to the nature and characters of the lesion, and to opinions totally opposed respecting its treatment, I thought, by its means, to establish the points in dispute which have been raised, and thus, to make known the motives of my decisions. These different points may be resolved into the following questions:

1st. Was there really luxation of the second vertebra on the third, and did this luxation consist in a pathological rotation of the vertebra upon its axis from right to left, and from before backwards, or, in an inverse movement, as MM. Marjolin and Sanson have stated in their opinions?

2nd. What are the characters and principal agents and auxiliaries in this luxation?

3rd. Should reduction be always attempted, and is this reduction susceptible of danger, and how is it to be performed?

1st Question.—Was there really luxation of the second vertebra on the third, that is to say, displacement in the horizontal direction, and following the axis of the spine from right to left, and from behind forwards, as MM. Marjolin and Sanson have said? Luxation had taken place in the commencement, that is to say, separation of the articular surfaces, of which the right was elevated posteriorly, and the left pushed forward, beyond the articular facette of the third cervical vertebra. The existence of this fact was rendered plain by the extraordinary mobility of the vertebra, the relations of its parts with the surrounding parts, and the changes which its displacement have consecutively impressed on the neck and head. The vertebra was more than ordinarily moveable, in fact, we could, by depressing the osseous projection, formed at the right side of the nape, by the elevation of the transverse process, cause a very extensive wavering motion of the axis. By this manoeuvre we carried back the spinous process, hitherto buried in the flesh; but we could not succeed either in fixing the vertebra in its new position, or in bringing its left transverse process to the top of that of the opposite side. This displacement took place in the axis of the column, for the depression of the left side of the nape was proportioned to the projection of the right side, that is to say, that the two transverse processes represented two radii of equal length, having the same centre, and having described in a different direction arcs of a circle of the same extent. The circular movement of the vertebra had taken place in the direction which I indicate; for if it had done so in the opposite direction, as MM. Marjolin and Sanson thought, when they said, that the osseous tumour on the right side of the nape was formed by the spinous process deviating from that side; the left side ought to have been projecting in consequence of the posterior elevation of the corresponding transverse process; for it is not possible to imagine a deviation of the spinous process to the right, consequent on the rotation of the vertebra on its axis, without a proportional movement of its transverse process. Besides, there was depression at the left side of the nape, resulting from a pushing forward of the osseous parts and of the muscles which cover them. The shape of the parts does not then allow of any

doubt, with respect to the displacement forward of the left transverse process of the axis, and of the displacement backwards of the right transverse process. Finally, the treatment has completely evidenced this demonstration. We may still add that the direction of the head, which had undergone a rotatory motion from left to right, and an inclination forwards and to the left, could only be accounted for by a displacement in a correlative direction of the luxated vertebra. If the vertebra had turned from right to left, and from behind forwards, according to the opinion of MM. Marjolin and Sanson, the head would have been drawn in the same direction and the face would have looked to the left.

2nd Question.—The characters of the variety of which we treat, result directly from what we have said above, that is to say, an osseous tumour at the left or right side of the nape, following the direction in which the luxation occurred, and proportional depression of the opposite side; correlative elevation and depression of the cervical fossa; greater or less mobility of the vertebra, chiefly appreciable by the depressibility of the transverse process, and the variability of the different projections of the two sides of the nape; depression without any appreciable muscular tension at the union of the posterior and lateral aspects of the neck on the side of the displacement forwards of the vertebra; inclination of the head in the same direction and rotation of the aspect of the opposite side; in short an impossibility of any movement of the head and neck, without positive opposition from the muscles contained in the cavity of the curvatures, and of the angles described by the head and neck.

The principal agents of this luxation are without doubt the muscles which are inserted into the dislocated vertebra; external violence has led to the displacement, by breaking the articular capsules and ligaments, and the muscular contraction meeting no more resistance has completed the displacement. Another circumstance was necessary, fracture of the anterior edge of the superior left articular process of the third cervical vertebra, or fracture of the edge of the corresponding process of the dislocated vertebra itself: for these two articular surfaces meeting obliquely cannot glide upon one another without fracture, unless that the transverse process of the second vertebra should be raised sufficiently to admit of this articular surface gliding forward on that of the third cervical vertebra, an elevation which must induce an inclination of the head to the opposite side. With these three elements, laceration of the ligaments, fracture of one or other of the two articular processes, and perhaps contraction of the corresponding muscles. The mechanism of this luxation can be well accounted for in the following manner:

The head being kept fixed by the sterno and cleido-mastoid muscles, with the other anterior and lateral muscles of the neck, the combined action of the left spinal transverse fasciculi, and of the great posterior oblique muscles which are inserted in the spinous process of the second cervical vertebra, have produced, as the result of their action, a direct strain on the spinous process of the axis, and have dragged it to the left; whence arises the elevation of the right

transverse process, and the projection forward of the left. It is useless to add, that for this result to be produced, it was necessary that all the ligaments which unite the second to the third vertebra, must have undergone distention, and some laceration, and that the fibro-cartilage, and articular capsule at the right side, as well as the left, must have undergone the same violence.

The way in which the vertebra was displaced, by rotation on the axis of the spine, explains well the absence of every symptom of compression and distention of the marrow. The relations of the membranous canal remain the same as before, at least those of the centre to the circumference. There was only a slight twisting of the meninges, and a still slighter twisting of the spinal marrow caused by the origins of the nerves, which, in a slight degree, are obliged to follow the rotatory motions of the column.

3rd Question.—The evidence of a single case is not sufficient to establish as a general rule, that it would be right always to attempt reduction of the variety of luxation described in this treatise; but the detailed account of the symptoms which accompany it, and the certainty that these symptoms cannot induce those accidents which might occur in the reduction of other varieties of luxations; above all, when recourse is had to the method which I have employed, permit, me I think, to give a positive opinion as to the propriety of reduction. In fact, what are the reasons which are opposed to this practice? The fear of compression or of severe distention of the marrow; but one or other of these results can only happen under the following conditions: 1st. When, during reduction, the axis of the luxated vertebra is no longer found in the axis of the spinal canal. 2nd. When the attempt at reduction produces a sensible elongation of the marrow, in consequence of the separation vertically of the luxated vertebra from the one below it. Besides, the motion described by the reduced vertebra is a circular and horizontal motion; circular, around the marrow as its centre, and horizontal in the plane occupied by the vertebra, both during and after reduction. We may add, that if the conditions were not not equally favourable with those which we mention, the method of reduction by slow and gradual extension of the muscles, must compensate as much as possible for circumstances less decidedly favourable.

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*Evolution of Light in the Human Subject.*—"It was ten days previous to L. A.'s death that I first observed a very extraordinary light, which seemed darting about the face, and illuminating all around her head, flashing very much like an Aurora Borealis. She was in a deep decline, and had that day been seized with suffocation, which teased her much for an hour, and made her so nervous that she would not suffer me to leave her for a moment, that I might raise her up quickly in case of a return of this painful sensation. After she settled for the night, I lay down beside her, and it was then this luminous appearance suddenly commenced. Her maid was sitting up beside the bed, and I whispered to her to shade the light, as it would awaken Louisa. She told me the light was perfectly shaded. I then said 'What can

this light be which is flashing on Miss Louisa's face?' The maid looked very mysterious, and informed me she had seen that light before, and it was from no candle. I then inquired when she had perceived it; she said that morning, and it had dazzled her eyes, but she had said nothing about it, as ladies always considered servants superstitious. However, after watching it myself half an hour, I got up and saw that the candle was in a position from which this peculiar light could not have come, nor, indeed, was it like that sort of light; it was more silvery, like the reflection of moonlight on water. I watched it for more than an hour, when it disappeared. It gave the face the look of being *painted white* and *highly glazed*, but it danced about, and had a very extraordinary effect. Three nights after, the maid being ill, I sat up all night, and again I saw this luminous appearance when there was no candle nor moon, nor, in fact, any visible means of producing it. Her sister came into the room and saw it also. The evening before L. A. died, I saw the light again, but it was fainter, and lasted but about twenty minutes. The state of the body of the patient was that of extreme exhaustion. For two months she had never sat up in the bed. Many of her symptoms varied much from those of other sufferers in pulmonary complaints whom I had seen, but the general outline was the same. Her breath had a very peculiar smell, which made me suppose there might be some *decomposition* going forward."

The young lady about whose person these luminous appearances were manifested, I had seen several times before her return to the country; her lungs were extensively diseased; she laboured under the most hopeless form of pulmonary consumption.

Extraordinary as the foregoing case may appear, it is not without parallel. A few months since, I was in attendance upon a young lady who was in the last stage of pulmonary consumption. She had read in the newspapers a brief notice of the communication which I had, a short time previously, brought before the College of Physicians, upon the evolution of light in the living human subject; and feeling deeply interested in so remarkable a phenomenon, had, more than once during my visits, directed her conversation to that subject. It is no less remarkable that she should, in her own person, have subsequently exhibited the very same phenomena. The following statement I received from her sister:—

"About an hour and a half before my dear sister's death, we were struck by a luminous appearance proceeding from her head in a diagonal direction. She was at the time in a half-recumbent position, and perfectly tranquil. The light was pale as the moon, but quite evident to mamma, myself, and sister, who were watching over her at the time. One of us at first thought it was lightning, till shortly after we fancied we perceived a sort of tremulous glimmer playing round the head of the bed; and then recollecting we had read something of a similar nature having been observed previous to dissolution, we had candles brought into the room, fearing our dear sister would perceive it, and that it might disturb the tranquillity of her last moments."—*Sir Henry Marsh's Essay on the Evolution of Light in the Human Subject.*

*On the Treatment of Favus (Porrigo).*—There is probably no disease in the whole range of medicine for the cure of which so many different modes of treatment have been employed, and such a variety of *specific* remedies vaunted, as for favus. And this can readily be accounted for when we reflect on the obscurity that has hung over its diagnosis, and on the extreme obstinacy with which, when once fully established, it resists almost every plan of treatment that is adopted for its cure.

The treatment of favus may with advantage be divided into a *local* and a *general* one, in both of which there are several rational indications to be fulfilled.

The *local treatment* presents three indications, viz. :

1st. To clear the scalp of all scabs and crusts, and to attend scrupulously to cleanliness.

2nd. To remove the hair from the diseased follicle.

3rd. To set up a new action in the part affected.

The first indication is readily fulfilled by the application of poultices continued for two or three days, or by means of lotions containing the diluted hydrochloric acid in the proportion of an ounce to the pint of water, after the hair has been cut short. Either of these means will suffice for the object in view, but the poultices are preferable, as they are always most convenient in their application and most speedy in their action. If, however, the crusts be very thick, they may first of all be loosened by the acid lotion, which acts by dissolving out their earthy parts, and then be separated by means of a large, thick, soft bread or linseed-meal poultice, which will effectually clear the scalp. In the course of the treatment, cleanliness must be attended to by washing the head at least once a day with soap and water.

The second indication to be fulfilled in the treatment of favus, is the removal of the hair from the diseased follicle, and unless this be accomplished it will be in vain that we attempt a cure ; for, as Rayer has justly observed, this is as essential in the treatment of favus as is the removal of the nail in certain varieties of onychia ; and almost every plan of treatment that has been recommended has had this for one of its chief objects.

To effect this purpose a pitch cap or plaster used formerly to be employed, by which means the hairs were forcibly torn up by the roots. Fortunately this horrible barbarity, which was a disgrace to medicine, has now no advocate, although it was the common practice even at the commencement of the present century. The mode in which the cap was prepared and applied was as follows: A quantity of rye-flour was boiled in white-wine vinegar, to which Burgundy pitch and resin were gradually added until the mass became sufficiently consistent : it was then spread upon a thick, strong cloth, slit in different directions, so that it might be made to fit the head more closely and without creasing. The scabs were then removed by means of poultices and emollient fomentations, and the hair having been shaved off, the plaster was applied as tightly and as closely to the head as possible. After it had remained on for about four days, it was forcibly pulled off in a direction contrary to the growth

of the hairs, so as to tear them out by their roots; this process was repeated every fourth day during the treatment. The pain, which was said to become less severe each time, was still so violent after a month of this treatment that children who were subjected to it uttered dreadful screams, and often voided their excrements involuntarily, so intense was the suffering. Gallot states, that "after the third month the pain lessens," and that it matters not what species of tinea it is, as the cap is a specific for all of them. No patient was, however, cured in less than six months: some, says he, required nine or ten months of assiduous treatment; some are not cured till the second year, and those cases that are obstinate not till the third; in some even the disease persists after three years of treatment, and although it is then sometimes liable to relapses, yet these yield as readily as the first attack does. Mahon relates a case in which, after the pitch cap had been employed without success for ten years, his plan of treatment succeeded in six months. It is needless to make any comment upon these statements, but it is surprising that such a method, belonging as it did to the darkest ages of medicine, could have survived until the early part of this century.

For the same purpose, viz. the extraction of the hairs, Plumbe invented a pair of pincers, by which these organs and their bulbs could be removed. This was certainly a less cruel procedure than the former one, but must nevertheless have inflicted very great suffering upon those subjected to it. The length of time, also, that it required, to accomplish its object fully, was very objectionable; and besides, if the disease were extensive, it would be impossible to effect a complete extirpation of all the diseased hair without removing much of that which was healthy. Neither the cap or pincers, however, are any longer necessary, as by the proper use of mild depilatories, all the effects, of which they were capable, can be produced with certainty and without pain.

Various corrosive substances have been at different times, by the older writers especially, recommended as depilatories; but it is to the Messrs. Mahon that the credit is due of having first extensively employed milder and not less efficacious means for this purpose. In consequence of the success attending their method, which is attested by Rayer and others, it has been adopted very generally in the French hospitals, the enormous number of 39,719 cases of disease of the scalp, of which a large proportion was favus, having been treated by these gentlemen in the course of one-and-twenty years.

They begin their treatment by cutting the hair at a distance of two inches from the scalp; the scabs are then removed by means of emollient applications and of poultices, and the skin freed from all impurities by means of soap and water. After this has been repeated for several days in succession, an ointment composed of lard and a depilatory powder, the composition of which is kept secret, is rubbed in every second day on the parts that are affected. A fine comb is then passed through the hair on the days on which this preparation is not used, and thus the hair is got rid of gradually and slowly, but without pain. After this plan has been continued for a

few weeks, a small quantity of the powder is scattered through the hair, and the combing proceeded with. This is persevered in, according to the severity of the disease, for a longer or a shorter period, and has been found to succeed when every other mode of treatment has failed. It causes no pain, is devoid of danger, and does not prevent the hair from growing, provided the bulbs have not been destroyed. The composition of the ointment and powder is kept a secret, but according to Chevalier, who has analysed them, they consist of slaked lime partly carbonated, of a little silica, alumina, and oxide of iron (probably impurities in the lime), and of subcarbonate of potass; their activity evidently depending upon the lime and subcarbonate of potass they contain. The chief causes of the success of this treatment seem to consist in the removal of the hair by gentle means, and by the continued attention to cleanliness which is enjoined, aided, no doubt, by the peculiar action which the salts of potass appear to exert upon the scalp.

For the ointment\* of Mahon we may substitute one composed of 3j. of carbonate of potass to 3j. of lard, or else a lotion containing 3ij. to 3iij. of the same salt to 3vj. of water, either of which, if used in the way recommended by Mahon, will be found to act as mild and sure depilatories.

For the fulfilment of the third indication, namely, that of setting up a new action in the affected part, a vast number of topical applications have been recommended by most of the writers on the diseases of the skin; almost every medicinal substance, indeed, whether mineral or vegetable, of any activity whatever, having found an advocate. The very fact, however, of such a variety of formulæ having been propounded for this purpose, shows how imperfectly the treatment of this disease was understood, and how very inefficiently it must have been conducted. Amongst the substances that have been employed, may be mentioned decoctions of lentils, poppy-heads, marsh-mallows, bran, barley, dulcamara, hemlock, fumitory, white lilies, mulberry leaves, briony, plaitain, myrtle, rose leaves, and the leaves and husks of the walnut; burnt paper, oil, honey, alkaline lees, lime-water, the acids, muriatic and nitric acids, either concentrated or diluted, creosote, ink, charcoal, oxide of manganese, chalk, sulphur, nitre, the salts of iron, of copper, of silver, of mercury, of zinc, the preparations of potass, the sulphuret of potassium, alum, and the iodides, have all found their advocates. Of all the preparations in this list, which might be extended very considerably, none are of

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\* M. Petal recommends the subjoined ointment and powder :

Soda (of commerce) . . . . .	60 parts.
Slaked lime . . . . .	4
Lard . . . . .	120
Mix together for the ointment.	
Quicklime . . . . .	120 parts.
Powdered charcoal . . . . .	8
Mix for the powder.	

much value as external applications in this disease, except the iodide of sulphur, the sulphuret of potassium, and the carbonate of potass.

The iodide of sulphur,\* which was introduced to the notice of the profession by M. Bielt, is, without doubt, a topical application of very great power, appearing, when combined with other means, to set up a new action in the diseased scalp, which shortly puts a stop to the evolution of fresh favi. It should be employed in the proportion of ten grains, or a scruple, to the ounce of lard. If the ointment be of a greater strength than this, it will be very apt to give rise to an eczematous affection of the scalp, by irritating it too powerfully; it may be used twice a day. Active as this preparation undoubtedly is, it occasionally fails, especially in chronic cases of the disease occurring in a scrofulous subject. Bielt, nevertheless, speaks very favourably of its use, and I have been very successful in curing several cases of this disease with it. Instances of a like kind have also been lately published in the journals.

The sulphuret of potassium, in the form of lotion, is especially of service in removing that scurvy condition of the scalp that is left after the removal of the scabs.

Lotions of the carbonate of potass are also most useful, as they possess the double advantage of removing the hairs from the diseased follicles, at the same time that they excite the vessels of the scalp to a new and a more healthful action.

When favus occurs on the extremities or trunk, in the form of a few small tubercles only, it may most effectually be got rid of by cauterization with the nitrate of silver, or the strong mineral acids. These means, however, should only be had recourse to when the disease is of very limited extent, and should not be employed when it is seated on the scalp, where their application might be attended by bad consequences. And it should be carefully borne in mind, that more good will always be effected in the treatment of this complaint by the patient and continued employment of gentle means to remove the hair, and to induce a new action in the hair-follicles, than by any heroic measures, which usually will only tend to aggravate the mischief.

*General Treatment.*—Although this disease is, in many cases, strictly speaking, a local affection, as when it occurs from contagion in a previously healthy subject, yet in other instances it certainly has a constitutional origin, or at all events it may have its severity increased, and its duration prolonged by the state of the general health of the patient. Thus when it arises spontaneously, without contagion, in a scrofulous child, it is, without doubt, merely the local manifestation of a general cause; just as much so as tubercle in the lungs or in the mesenteric glands would be. Why it should appear in the form of favus is a question that remains to be answered; as we are not cognizant of those circumstances that cause tubercle to be deposited in particular organs at different ages. But the fact remains certain,

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\* It has lately been strongly recommended by Dr. Davidson in the *Edinburgh Medical and Surgical Journal*.

that favus, when it arises spontaneously, is always connected with and appears to be dependent upon a scrofulous habit of body,—the tubercular cachexia of some writers. Hence, in the treatment of this disease, it is necessarily of the greatest importance that this state of the constitution be, if possible, corrected. And this can best be accomplished by the employment of mild tonics and alteratives. Of the former, the salts of iron, either alone or in combination with some light bitter infusion, will be found the most useful. The iodide of iron, more particularly, is of service in this respect, as it appears to combine the tonic properties of the metal with the alterative qualities of iodine, and is therefore a very valuable remedy in those cases in which such a combination is required. It may most conveniently be given to children in half-grain or grain doses, twice a day, in a teaspoonful of simple syrup, which, at the same time that it conceals its taste, prevents its decomposition. Next to the iodide the ammonio-tartrate of iron, in doses from two to five grains, will be found of most service, especially if given in combination with infusion of calumba, or the compound decoction of aloes, which, although not a very chemical mixture, is a very useful one. These preparations should, however, only be employed when the disease is ingrafted on a weak, scrofulous constitution, and are not called for when it occurs from contagion in a healthy subject. If any excitement supervene during their use, if the tongue should become dry and glazed, or red at the tip and margin, and the skin hot, they must immediately be discontinued, and a few doses of mercury and chalk, or of rhubarb and soda administered, so as to lessen the irritation.

In recapitulation then, the first thing to be done when a patient affected with favus places himself under our care, is to cut the hair to within a distance of half an inch or an inch of the scalp; poultices are next to be applied, and fomentations used, until all the crusts are thoroughly and completely removed, the head being, during the whole of the after-treatment, washed with brown soap and water at least once a day. Mild alkaline depilatory lotions or ointments are then to be employed, and a small-toothed comb used on alternate days, the hair being thus separated slowly and gently from the diseased follicles. If the disease be more than ordinarily obstinate, an ointment of the iodide of sulphur should be had recourse to, and if it occur in a scrofulous child, the iodide of iron, and mild tonics and alteratives may be administered, with a view of improving the general health.

In conclusion, it may be confidently stated, that by patience and perseverance in the employment of the means above indicated, and by scrupulous attention to cleanliness, there are few cases of favus that will not speedily be cured; and that this disease, instead of continuing, as it ever has been, an opprobrium to medical men, can be as successfully treated, in the great majority of cases, as most other cutaneous affections.

[The above extract is from *Mr. Erichsen's* recent work, "A practical Treatise on the Diseases of the Scalp," a book we can strongly recommend, as containing a full and accurate account of the various forms of eruption to which the scalp is liable. It is illustrated by several beautiful plates.]

*On the Use of Inspissated Ox-Gall.*—In the Medical Times of May 14th, 21st, and 28th, is an interesting communication from Dr. Clay of Manchester, on the use of inspissated ox-gall. He says:

"I have had my attention for some time directed to this somewhat novel article of the materia medica, with a view to ascertain its powers as a medical agent, to what cases it appeared most applicable, and the best method of administering it. Gall of animals is by no means a new remedy, for I find its use spoken of by Boerhaave, and since his time by various writers; full justice, however, has not been done to its merits, it only having been tried in isolated cases, no one taking the trouble to test its powers by frequent experiments either on the same or different diseases. Boerhaave relates, 'that he has cured pale rickety children by pills made of the galls of the eel and the pike; that the medicine operated powerfully by urine; and that by its use the belly, before swelled, subsided surprisingly.' Lewis, in his Materia Medica, says, 'in want of appetite and other complaints proceeding from a deficiency of bile in the first passages, this animal bitter may probably be of more service than those of the vegetable kingdom usually directed in such intentions.' As an external application, ox-gall, combined with the camphorette spirit of wine, has been often spoken of in rheumatism, sprains, and bruises. From experiments made upon gall by Cartheuser, Baglivi, and others, it was found to be very soluble in water, sparingly acted upon by rectified spirits, rendering oily, unctuous, or resinous substances, miscible with water; it *has the peculiar property of preserving milk from coagulating, or turning sour, or when coagulated immediately dissolves it again*; this last property deserves particular notice, and to which I intend to allude afterwards. So far as experiments have been instituted on the gall of animals, there does not appear to be any great difference in its composition, and as the gall of the ox is much easier to be obtained in large quantities, I have selected it as the object of the following experiments:—Dr. Peacock of Darlington remarked (Lancet, vol. i. 1836-7, page 398), that he had observed in a case of scirrhus or cancerous ulcer of the breast, and when the system exhibited an accumulation of bile, the pains accompanying such diseases (cancerous) were very greatly alleviated. In the case from which he drew this inference, during the progress of the disease, the patient was frequently attacked by the symptoms of jaundice, and invariably when the white motions and yellow skin appeared, there was almost entire relief from pain. Although Dr. Peacock exhibited gall in other cases, he does not give any decided opinion upon it, but augurs favourably and wishes its being further tested by others. Having some cases analogous, I determined on giving it a trial in such affections, before I proceeded to its trial in other diseases, towards the cure of which I fancied its powers more applicable."

In these affections he found it to relieve the pain in a remarkable manner, but the most valuable effects from the use of the ox-gall were observed in cases of obstinate constipation from painter's lead, of which he gives five cases, and in dyspepsia, a well marked instance of which occurred in his own person, the history is as follows:

"I was myself labouring under dyspepsia, almost every kind of food became acid soon after being taken; I had violent headaches, constant pain in the epigastric region, and bowels very much constipated, many times three or four days without a motion; occasional relief, but of a very temporary nature, was obtained by the *pillule hydrargyri*. Having been subject to these symptoms, more or less, for seven or eight years, but which have been often very severe during the last three or four years. Purgative medicines always produced great irritation and uneasiness for some time after their exhibition. Under these circumstances I took two four-grain pills of the inspissated ox-gall, not having had any motion for nearly four days; the pills were taken at four o'clock in the afternoon, and at seven, without even the slightest sensation of pain, or the common feelings arising from having taken purgatives, I had a free and copious motion, the excrementitious mass being in a pulpy form, and perfectly free from the indurated character I had been so long accustomed to. I repeated the dose next day with similar results. I experienced not even the slightest feeling of uneasiness; indeed, had I not known the fact, I should not have supposed that I had taken medicine of any kind. The acidity immediately left my stomach, and when under its influence the pains in my head and stomach were removed, and my bowels are now quite regular. From taking occasional doses, of course its effects are not sufficiently tested; but I have experienced more relief, with less unpleasantness, than from any other of the many means I have ever resorted to; in fact, its value in dyspeptic stomachs is incalculable."

His formula of prescription is as follows:—

R. Fel. Bov. Inspiss.

Ol. Carui.

Magnes. Carbonatis, q. s. ut fiat massa. M.

Divide in pil. xxxvi., capiat ii. ter in die.

He then attempts an explanation of the rationale of its mode of action, but for this we have no room.

"But," he says, "if (as I shall afterwards prove) ox-gall directly dissolves the hardened feces, and by that action alone renders them easier of propulsion, by the addition of bile I directly overcome the constipation, and by charging the system with an extra quantity of healthy bilious secretion, I prevent its recurrence, giving time for improving the secretory powers of the liver by other remedial measures. In cases of constipation produced by the exhibition of opium, it is always remarked, that the motions are clay coloured, evidently proving that less bile is secreted than ought to be, opium having a more decided effect on the secretion of the liver than that of any other organ in the body; hence (the bilious secretion being checked, or materially diminished by the presence of opium) follows that obstinate and frequently mischievous *constipation* so often met with in practice, and more particularly in children, who are so often crammed with sleeping nostrums. When I have found it necessary to employ opium in the treatment of disease where I wished to avoid its peculiar tendency to constipate the bowels, I have always succeeded by combin-

ing it, with the inspissated gall, which in no way impedes the desired action of the opium, whilst it is an effectual preventive to its confining the bowels."

A case in which opium was administered, and its constipating effects obviated, by combining it with the inspissated ox-gall, is then related. After which Dr. Clay mentions its efficacy in cases of organic diseases of the liver, in obviating the commonly attending constipation.

"In all cases of marasmus, whether of children or in the atrophy of adults, I have in ox-gall a valuable remedy. In acidity of the stomach, &c., of children, it is of most decided, effectual, and immediate relief. The curdled vomitings, green motions, abdominal gripings, and restlessness immediately disappear, and a better state of general health is substituted; in all such cases there was a decided action on the kidneys, increasing the secretion. On looking at its effects upon children as just stated, particularly whilst at the breast, living almost entirely on milk, the result is not different to what we might suppose. when considering the experiments of Baglivi, Lewis, &c., '*That it prevents milk from turning sour, and dissolves it when in a state of coagulation;*' an antacid preparation is indicated, which is one of the peculiar properties of this remedy. To show its direct effect upon hardened fæces, a child of sixteen months old passed a very hard motion with very great difficulty, not having had one for three days. I poured a solution of ox-gall over it in a vessel, immediately its chalky appearance was changed to a more healthy bilious colour, and reduced to a pulpy mass in half an hour; from this fact, I will suppose a case (one which has frequently occurred in my practice), an adult with hardened fæces in the rectum, almost, if not impossible, to pass without assistance; under such circumstances, what could afford a better prospect of relief than two or three ounces of recent gall, diluted with as much water, used as an injection. It is needless to observe I would pledge myself as to the result, viz., an immediate softening of the mass facilitating its propulsion.

"So far as these experiments have progressed, the use of ox-gall in some diseases is of the most satisfactory character, presenting us with an excellent and peculiarly effective corrective for the many and various derangements of the alimentary canal, unlike many of our best medicines, inasmuch as in whatever cases it is given, if no benefit results, no harm is ever experienced from it. Its action on the system is not as a purgative, but as a mere solvent of the *material* contained within the intestinal canal, producing no excitement to propel, but by liquefying the mass, facilitating its excretion. It is also a tonic—and in children, to a moderate extent, a diuretic—but less so in an adult. It appears to have a peculiar and specific action on all that variety of diseases connected with derangements of the digestive organs, and from the proofs I have advanced, I believe it worthy of extensive trial. The preparation I have been in the habit of giving, is simply the recent gall of the ox slowly evaporated to the consistence of an extract, and afterwards made into pills, as in the formulæ already given; but if it is sufficiently firm, I prefer the simple extract made

into pills, without any addition; and if the gall be recent, it has very little smell, but an intensely bitter taste. The gall bladder of a moderate sized ox will afford as much extract as will make one hundred four-grain pills, and is an article both cheap and easy to procure. Trusting it may be further tested by others, I leave it to the profession, confidently recommending it to their notice."

*Employment of the Ergot of Rye in Cases of Paraplegia*, by M. Payan, of Aix.—M. Payan begins by stating that he has recently sought to demonstrate that it was wrong to consider ergot of rye as a simple excitator of uterine contractility; that facts prove that the ergot acts on the rectum, the bladder, and the inferior extremities, when these parts are in certain asthenic conditions, in the same manner as on the womb in cases of uterine inertia; and that, not being able to attribute rationally to this agent specific effects on parts of the body essentially different, he was obliged to seek for its action still further, and to refer it to some organ holding still under its influence these different parts. M. Payan has discovered that it is on the spinal marrow that the ergot exercises a special and primitive action.

This fact being established, it became evident that we ought to recur to the use of the ergot in paraplegias and debility of the inferior extremities, proceeding from causes which have suspended or weakened the action of the spinal marrow, without having altered its texture.

M. Payan adds the three following facts to those which he has already published, and which demonstrate the justice of his views:

1. A man of 40 years, fell on the perineum, and paraplegia was the consequence. The patient, treated at Marseilles, was completely cured. Some time after, in a journey which he made to Aix, he again experienced the same symptoms, and entered the Hotel Dieu of that city. In the absence of M. Payan opiate liniments, blisters, &c., were unsuccessfully used against the paraplegia. The case then came under M. Payan's care, who substituted for these means one gramme\* of the ergot to be taken once. Twelve hours after the paralyzed limb became agitated frequently by muscular starts, and he daily recovered strength. At the end of six days the patient could walk with the aid of a single crutch. During a fortnight the ergot was administered in the dose of two grammes. A month after, the treatment having been suspended on the fifteenth day, on account of the appearance of some slight gastric derangement, the amelioration persisted, but the patient left hospital.

2. A man of 30, attacked with a complete paraplegia, committed himself to the care of M. Payan. A number of energetic measures had already been tried. This was his state when he was submitted to the observation of this skilful physician.

The two lower limbs support well enough the weight of the body; but he finds it impossible to walk any time without sitting down; un-

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\* Equivalent to 15 grs. English.

less he does so he infallibly falls. The right lower extremity is strong enough, but insensible; the other limb is sensible, but a little atrophied. The bladder has lost a part of its contractility.

A gramme of the ergot was administered every morning. At the end of a few days the dose was increased to two grammes. At the same time, frictions with a stimulating liniment were made along the spine. After eighteen days the two lower extremities had become strong, and the patient could return into his country.

3. A workman, having endured a very severe paraplegia, the consequence of a bad attack from lead; different means had failed to relieve the malady; the ergot completely triumphed over it.

From these three cases M. Payan not only infers the efficacy, but, moreover, the complete innocence of this medicine, which has been ordered for six weeks without any accident, which this year has been given for forty consecutive days, in doses of forty to eighty centigrammes, to a young girl five years old, without her being the least injured by it.—*Journal de Pharmacie*.

*On the Ergot of Rye.*—One of the most active substances in the power of the obstetrical art, the ergot of rye, has been the subject of some new researches on the part of M. Bonjean de Chaubery. He has concluded, from numerous experiments, 1st, that the ergot gathered the first day of its formation, has not the toxicological properties that it possesses gathered after the sixth day; 2nd, that a heat of 100° produces the same effect as too early a gathering; 3rd, that fermentation takes away this property also; 4th, that old ergot, stale and damaged (*piqué et avarié*), does not lose any thing on this account; all important circumstances to explain the want of success according to the different modes of administration.

Chemistry has revealed to M. Bonjean two very different active principles.

1st. One which acts as a poison, the oil of ergot, of a thick consistence, of an acrid taste, of a yellow colour, soluble in cold ether, and in boiling alcohol; it possesses poisonous properties in a high degree; the author thinks that twelve *grammes* (3iii. English) of this oil are equal to thirty-two *grammes* (3viii. English) of ergot; but he has discovered, that at a temperature of from 80° to 100°, it loses its poisonous qualities, and is converted into resin. It is therefore better, in this respect, to prepare it with cold ether.

2nd. The watery extract is obtained by treating with water the powder deprived or not deprived of its oil; it is brown, of a thick consistence, it has a tainted taste (*pourri*); it is soluble in water; draughts, syrups, boluses, &c., can be formed with it. It is not poisonous, but enjoys remarkable anti-hæmorrhagic properties, on which account the author calls it the *hæmostatic extract*; but it appears to me that to name a substance hitherto very little studied after one of its effects alone would be a very defective method. M. Blanc, of Aix-les-Bains, has obtained excellent effects from this extract, in a case of profuse uterine hæmorrhage. It was given in the dose of fifty centigrammes to one gramme (fifteen grains English) a day. M. Bonjean

thinks it would be useful in losses of blood, simple or puerperal, in the bloody flux, &c. He insists on the absolute therapeutic use there would be in separating two active principles so different, and to separate, by analysis, the watery extract from the oil of ergot which is poisonous.

M. Monchon remarked, that the oil of ergot was already known to Mr. S. Wright, and that he employed it in the dose of several drops.

M. Bonjean replied, that the discovery went back as far as 1814, but he believed that he was the first to specify its properties; and he claimed in his favour the important distinction which he had established between the two principles specified.—*Journal de Chimie Médicale.*

1. *Arsenic.*—*Report made by M. Magonby to the Society of Medicine of Bourdeaux.*—This report, which bears date 22nd June, contains the results of the labours undertaken by a commission named by the Society of Medicine of Bourdeaux, composed of MM. Barbel, Fauré, and Magonby, a commission which had the task of discovering if normal arsenic exists in the human body.

From the reading of this report we learn, 1st, that arsenic cannot be obtained from bones, taken fresh; taken calcined white; taken carbonised at a high or at a low temperature; treated either by sulphuric, hydro-chloric, or azotic gases, or treated with nitrate of potash, using afterwards Marsh's apparatus to test all the liquors obtained.

2nd. That the members of the commission have not obtained in their numerous operations the spots or stains (*taches*) which have been obtained by MM. Flavedin and Danger, (spots of phosphite and sulfite).

3. That arsenical spots may be obtained in treating with acids the flesh, the different organs, the bones of animals which have been poisoned by arsenious acid.

4. That moreover arsenic can be found after twenty days in the urine of an individual poisoned by arsenious acid.

The conclusions of the report are:

That nothing as yet demonstrates the presence of normal arsenic.

MM. Barbel, Fauré, and Magonby terminated their report in establishing, that, in judicial researches, Marsh's apparatus can be, and ought to be but an accessory to the means already long in use, means which ought never to be neglected.

We have found in this report some interesting facts which deserve to be noted: the first of these facts appears to demonstrate that the molecular disposition of zinc, and not its purity, as has been both said and printed, is the cause of the facility with which it decomposes water under the influence of sulphuric acid. Thus the commissioners have seen that zinc, feebly giving out, with sulphuric acid diffused through water, hydrogen, did not furnish more of it when the zinc was melted and poured into the water to granulate it; that it furnished it abundantly when this granulated zinc was taken and melted afresh to pour it out in plates.

The second is the precipitation, by sulphydric acid, of organic mat-

ters, under the form of flakes of a yellow colour,—a precipitate which had already been observed in different cases,—a precipitate which, in some of these cases, had caused the belief that the liquors on which the operations were made contained metallic oxides. It is true that subsequent researches had shown that the precipitated matter was an azotized organic substance.—*Journal de Chimie Medicale.*

*Rules to be observed during a Course of Mineral Waters.—*

In order to drink the waters in a state of genuine power, the patient must go to the Spa itself, where they issue, either from the bowels of the earth, or from the spout, in the pump-room of one of Struve's establishments. Should health, however, not permit the invalid to leave his room, the water may be sent to his residence; but its virtue will then be, in some measure, modified and diminished. If he is unable to undertake the journey to the Spa, at all, and is therefore obliged to use the waters at home; although not altogether impossible, it will yet, in that case, be very difficult for him to obtain the thermal waters; the cold ones, however, he may easily procure. But I am decidedly of opinion, that an equal degree of benefit can never be derived from the use of mineral waters, at home, as when they are drank at the establishment; because there does not then exist sufficient inducement, for the invalid, to make the necessary alterations in diet, occupation, and mode of living in general. Besides, it cannot be denied, that, although the waters, themselves, are undoubtedly the principal means in the treatment; yet the change of air, locality, and society; the journey; and at Brighton, the peculiar benefit of a sea-side residence, must, in many cases, be considered additional causes of recovery.

The early part of the day is certainly the most appropriate time for taking the water. The stomach is then empty, and the whole digestive apparatus best prepared for the speedy absorption and easy assimilation of the water; mind and body too, are, after nightly repose, most susceptible of the salutary influence of the morning air; at which time, moreover, the atmosphere is less oppressingly warm, than at an after period of a summer day. The patient should, therefore, endeavour to make his appearance, as early as possible, at the pump room; and ought to make it a rule never to be later than half-past seven or eight o'clock. The habit of indulging in sleep, in the morning, has so powerful an influence on individuals, especially ladies of delicate constitution, and very sensitive nerves, that if they deviate from it for a single morning, headach, loss of appetite, nervousness, lassitude, &c. will be the consequence, for the whole day. Persons so situated ought, therefore, to accustom themselves to early rising, by degrees; or, if this cannot be done, they may go to the Spa, at a somewhat later hour than is usual. If a perspiration, appearing to have the nature of a crisis, should be present during the night, it would be highly imprudent to check it; on the contrary, it should rather be promoted by some warm drink,—thermal water, for instance. Under such circumstances, the patient should not get up, until the perspira-

tion has perfectly subsided ; and then, having clothed himself with due reference to the susceptibility of his skin, and the state of the weather, go to the Spa, at as early an hour as conveniently possible. It is, likewise, not advisable for those suffering from affections of the air passages or lungs, to go to the Spa at a very early hour ; especially if the morning is cold or damp, and the wind from the east or north.

To the more particular observations, which have been made, at page 99, respecting the use of the waters, in a medical point of view ; I shall now add a few rules, concerning the patient himself, whilst he is drinking them.

After being properly prepared, as I have before spoken of, and the water most appropriate for his case, being duly fixed upon ; the invalid begins by drinking, on the first day, one or two beakers, of six ounces each ; it may sometimes, however, be necessary to commence with half a beaker only. He then increases the number of beakers, each successive day, by one or two, or by half a one, till the highest number is reached, which, generally speaking, will be best determined by the drinker's own feeling ; for there is, if I may say so, a certain point of saturation, beyond which it is but seldom advisable to go. He now continues to drink the suitable quantity of water, every day, regularly, without any interruption, except what may be caused by urgent circumstances, until about the beginning of the last week of the course ; when he may gradually diminish the number of beakers, in the same ratio he observed in increasing them, at the commencement. In changing the waters, the following plan should be pursued. In going from Marienbad to Eger, for instance, if the quantum is six breakers, begin on the first day, with five of Marienbad, and then one of Eger ; on the second day, first take four of the former, then two of the latter ; proceeding in this manner, till the change is complete.

It frequently happens, that the cold waters disagree with weak and irritable stomachs ; in such instances, it will be proper, at first, to temper them, by mixing, as the case requires, some hot milk, or a little Ems or Karlsbad, with them, until the stomach accustoms itself to the natural temperature of the water. The hot waters, especially the Sprudel, can only be taken by sipping ; all others ought to be taken slowly, and in small draughts ; but those which are richly impregnated with carbonic acid gas, may be drank in large draughts, so as to let as little as possible of the gas escape, provided it agrees with the patient. If it disagrees, which is often the case, at the commencement of the course, the patient will do well to cause some of the gas to evaporate, by stirring the water with a spoon ; and also to allow a longer time to elapse between the successive beakers ; but whenever the stomach is able to bear it, the water ought to be taken with its natural quantity of gas.

There should be an interval of about fifteen minutes, between every two beakers ; or, I should rather say, the subsequent beaker is not to be drank, as long as the stomach feels in the least degree full, or burthened, by the quantity of water previously taken. During this

time, the patient ought, health and weather permitting, to take gentle exercise in the open air, and, if possible, in company with a pleasant and agreeable companion. The exercise should not be too active, nor prolonged to an extent that will produce fatigue, but must be proportioned to the patient's strength, and varied with occasional rest. Continual, or too fast walking; mental excitement or depression, caused by earnest conversation; profound reading; gloomy thoughts about the malady from which he suffers, are prejudicial at all times, but particularly when drinking the waters; and will probably make the delicate invalid feel uncomfortable and languid for the whole day. Those who are unable to leave their residence, should walk backwards and forwards within doors; and if they cannot walk, or are confined to bed, the waters may be taken in a horizontal, but not a sitting posture.

To promote the absorption and digestion of the quantity of water drank during the morning, gentle exercise should be continued for an hour after the last beaker; but if exercise should become an exertion, it is far more advisable, especially for weak persons, and delicate ladies, to return home in a carriage, and lie down on a couch until the digestion of the water is completed. Many ladies do themselves more harm than good, by too much walking about in the morning; and in this manner, frequently bring on swelling of ancles and feet, and many other temporary ailments.

To prevent toothach; the settling of tartar on the teeth; and laxity of the gums—which, in some cases, may be caused by the mineral waters, especially the hot ones—the following injunctions are worth observing. First, in drinking, avoid as much as possible, bringing the water in contact with the teeth. Secondly, on coming home from the Spa, clean the teeth immediately, with some astringent tooth powder; and if the gums are naturally lax, the mouth may be washed once or twice a day with an infusion of sage, mixed with some spirits of wine; or a solution of alum; or some tincture of myrrh, or catechu.

A strict adherence to a properly regulated plan of diet, is indispensable, during the employment of mineral waters, less, in reference of the water, itself, than to the disease, for which it is taken; for it is an indisputable fact, that without this observance, the treatment of chronic maladies cannot be successful. I do not mean to say, that the patient is to subject himself to painful privations; but he must religiously eschew any article of food or drink, that cannot be granted to him, on account of the state of his constitution; or because it might favour the disease, and prevent recovery.

In the first place, it may be remarked, that the absolute quantity of food required to sustain the frame is very moderate; and that almost every one, even the most temperate, in this respect, takes much more than is essentially requisite, for the maintenance of the body in a due state of strength. Great temperance in quantity of food, ought, therefore, to be the primary object of the patient's thoughts. It is an excellent rule to stop eating, just at the moment when he begins to enjoy it most; for every mouthful taken beyond this point,

is superfluous, and moreover will soon denote itself to be obnoxious. In such a case, the patient had better confine himself to a single dish; for, as Dr. Paris says, "a variety of dishes create an artificial appetite." If he eats slowly, masticates well, and attends carefully to the first feeling of satiety; he may take such a quantity, as he knows from experience,—and this is what Dr. Johnson calls "the golden rule"—"will produce no languor after eating; no unpleasant sensation of mind or body, during digestion." The number of meals must of course vary with each individual, according to the power of digestion; the degree of exercise; and the age and quality of the food. Those who have weak digestive power, should eat often during the day, but very little at a time, and also at regular intervals. For all others, two meals, viz. breakfast and dinner, with tea at night, ought to be sufficient; lunch and supper must be totally omitted during a course of mineral waters.

The breakfast must not be taken, until the quantity of water which has been drank during the morning, is entirely digested, and the stomach feels no longer full or distended, but quite comfortable, and longing for some food. It may consist of weak tea, coffee, cocoa, barley water, thin gruel, arrowroot, sago, milk and water; stale bread, or well-made toast; one soft-boiled egg; a small bit of chicken, or a slice of lean mutton. Every other sort of meat, and particularly fish, new bread, spongy rolls, hot buttered toast, muffins, &c. are injurious. Tea must be omitted, when the chalybeates are taken, and coffee, by those who suffer from affections of the liver. In cases of weak digestion, it is advisable to divide this repast into two parts: the first to consist of a cup of one of the above-mentioned liquids, with dry toast or biscuit, and perhaps an egg; and after the lapse of two or three hours, some cold mutton, or chicken, or a mutton chop, may be taken. In this manner, all the advantage of a substantial breakfast is gained, and moreover the profit of a lunch added, without any of the evils attending both.

The tyrannical fashion of dining at six or seven, or even later, is absolutely incompatible with a course of mineral waters; and if it is continued, the patient can by no means expect that benefit, which, under a differently-regulated regimen, he would probably derive from their use. The very latest hour for dinner, that can be sanctioned during a course of mineral waters, is five o'clock. This meal ought to be frugal, simple, and every dish dressed in the plainest manner possible. It may consist of any sort of butcher's meat, except pork; of game, poultry (with the exception of duck and goose), and the lean part of venison, either roast or boiled, and not too much underdone. Light vegetables, without butter and with little seasoning, are admissible; as spinach, asparagus, French beans, mealy potatoes and carrots. Fine stale bread; plain puddings, made of bread, biscuit, ground rice, tapioca, and the like, but without currants or raisins; and ripe fruits, stewed or baked, may be taken. Plain water, or toast and water, with a spoonful of brandy; or Seltzer water plain, or mixed with a little wine and sugar, are useful beverages. Malt liquors are very questionable; and I should say, had better be avoid-

ed. If wine cannot be done without, a glass or two of the kind which agrees best with the stomach, may be indulged in : a cup of coffee is, however, preferable after dinner.

All articles, not included in the above list, are improper. Fish might be permitted, if without butter and sauce it were not insipid, and apt to turn rancid ; and with these additions, it cannot be allowed. Smoked and salt meats, stews, ragouts, and all other made dishes ; heavy puddings, pastry, and highly-seasoned pies ; every kind of raw fruit, greens, and salads ; flatulent vegetables, such as cabbage, new or waxy potatoes, cauliflowers, &c. ; every sort of provocative to the appetite, such as cheese, pickles, nuts, &c. ; iced cream, and acids of every description ; the more fragrant aromatic condiments ; oil, and even the smallest portion of melted butter, are injurious. Spirits, home-made wines, liqueurs, and all strong malt liquors, must be abstained from ; and if the thermal waters are taken, cold beverages of all kinds must likewise be avoided.

The evening meal or tea, should be the same as the breakfast, but without animal food. Those who have been accustomed to take spirits before retiring to rest, may, if they cannot do without it, take a very small quantity of good brandy, in a tumbler of water. Supper, as stated before, can by no means be permitted.

Exercise in the open air, not only in the morning, at the time of drinking the waters, but also during the rest of the day, is, in most cases, one of the conditions requisite for a successful treatment by mineral waters ; but it ought to be gentle, proportionate to the strength of the invalid, alternated with repose, and not prolonged to the extent of producing fatigue. If the state of health, or inclemency of the weather, &c., prevent out-door exercise, the plan recommended by Dr. Johnson may be adopted, of going up and down stairs repeatedly, during the day ; or that of Mr. Abernethy, of walking actively, to and fro, as sailors do on shipboard, with the windows thrown open. Although it has been said that "riding is the best exercise for regaining health, and walking for retaining it ;" yet I perfectly agree with Dr. Paris, in thinking that one should not supersede the other ; and where the two modes can be conveniently combined, the greatest advantage will be derived. Dancing can, certainly, not be objected to, during the use of the waters ; but it must be indulged in moderately, and not at late hours. Hunting, rowing, cricket, and other violent amusements, cannot be sanctioned, on account of the exertion caused by them, and the liability to catch cold, when too much heated. The best time for bodily exercise is between breakfast and dinner ; and when it is practicable, after tea likewise. One hour after breakfast, and two hours or more after dinner, should be permitted to elapse before exercise is taken ; it is imprudent and injurious to do so, either directly before, or immediately after a meal.

Rest is not less necessary than exercise. If there is the slightest feeling of nervous or vascular excitement ; of weariness, lassitude, or fatigue ; the patient ought to lie down on a couch, taking care to loosen or remove all ligatures. The horizontal position, or at least, sitting

with the feet horizontally supported, is much to be recommended during the course of mineral waters, to all persons of weak constitution and lax fibre, particularly delicate females; to prevent swelling of the ankles and feet, and other inconveniences. The patient should avoid late hours, mental excitement, and bodily exertion, towards evening; and retire to rest, with a composed and tranquil mind, regularly at ten o'clock; in order that he may sleep well during the night, and be able to rise early, and go through, with sufficient strength, the next day's curative occupation.

There can be no doubt that a habit of rising early, and not sleeping during the day, is a very proper one, while mineral waters are used; but if all patients were indiscriminately advised to follow this practice, I am convinced, that more harm than good would, in many instances, be the result. With respect to early rising, I refer the reader to page 126, and as to sleeping during the day, I have no hesitation in saying, that all persons of weak constitutions, more especially nervous, irritable, and delicate ladies, who can sleep but little in the night, or who are in the habit of sleeping during the day, will do themselves less harm, in giving way to the natural inclination to slumber, than by repressing it forcibly. Patients of this description may, therefore, at any time of the day, refresh themselves with half-an-hour's sleep in the recumbent posture, removing all ligatures from the body; but during the digestion of any meal, especially dinner, they will do better to take a short nap, while sitting in an arm chair, with their feet horizontally supported.

It has already been observed, that anxiety, care, grief, in short, mental disturbance of any kind, will impede the successful progress of a cure by mineral waters; and to this, I cannot but add, that all serious intellectual occupation, involving profound study, has a no-less pernicious effect. The patient must, therefore, endeavour to possess a tranquil and cheerful mind, together with hopes and confidence in the remedy he is using. He should entertain himself with light reading, listening to music, and should seek agreeable society, where he may engage in cheerful and amusing conversation; that sort of company, however, is to be avoided, in which the mental or physical passions are likely to be excited.

It has been frequently stated, in the foregoing pages, that during the use of mineral waters, the whole skin is more active and sensible to atmospheric changes; and that by promoting the cutaneous functions, the internal viscera become relieved, and excitement of the brain diminished. It is, therefore, necessary for the patient to wear flannel, or at least cotton, next his skin; and to be careful in clothing himself, not only according to the season of the year, but also to the time of day; the kind of exercises to be taken; and with reference, likewise, to the state of the cutaneous functions. If proper attention is paid to the clothing, there need be no objection to out-door exercise, which is so essential to the treatment; but great care must always be taken, to guard against getting heated, or profusely perspiring; on account of the subsequent liability to catch cold. Sitting

in a draught, riding against a strong wind, boating, and being out of doors late at night, must likewise be carefully avoided.

On commencing the course, all pharmaceutical means which may have been in use (either commonly, or as preparatory only), must be discontinued; and during the course no medicine whatever, whether domestic or otherwise, should be taken internally. Although this is certainly the general rule, there are yet exceptions to it: for instance, when the stomach is actually too weak to digest the waters, or when the appetite is very deficient; it will then be advantageous to take some bitter stomachic, as a spoonful of the compound tincture of gentian, diluted with a little water two or three times a day; the tonic property of which may be increased, according to Dr. Johnson's plan, by adding half a grain of sulphate of quinine. The bowels, also, often require some assistance. If they are not sufficiently acted upon by the water drank, some Karlsbad salt may be added to it; a dose of Seidschütz or Püllna occasionally taken warm; a table spoonful of the mellago of taraxacum, taken in some water, twice or thrice a day; or injections of common or sea-water, and in particular cases, of one or other of the mineral waters, may be used, warm or cold, once or twice a day, if required; or alternately with the above-mentioned means. In cases where there exists a high degree of muscular or nervous irritability; spasm, fever, or inflammation; a congested state of any organ; hemorrhage, profuse diarrhoea, and vomiting; or when the symptoms or pains of the original disease are increased or altered in kind, which is not unfrequently the case in obstructions, enlargements, &c., of the abdominal viscera, an active and rigid treatment will often be necessary; but this must be conducted by a physician.

No patient, who drinks mineral waters, should take cold, hot, or shower baths, without proper advice; he need not, however, be afraid of tepid or warm baths, the use of which will assuredly favour the internal action of the water. While the resolvent waters are drank, I should recommend patients in general to take a tepid or warm bath twice a week, some two hours after breakfast, for about twenty or thirty minutes; on leaving the bath, health and weather permitting, to take exercise; after which rest for half an hour or one hour, and then go to dinner. Weak persons and delicate ladies should, however, repose on a couch immediately after the bath, and also before dinner, using gentle exercise during the intervals. An inclination to sleep must be resisted directly after bathing.—*Franz on Mineral Waters.*

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*Carlsbad.\**—We are happy to be able to lay before our readers an excellent description of this celebrated Bohemian spring, from the recent work of Dr. Carro, which is one of the most amusing, learned, and candid books of its class, we have ever read.

“Carlsbad, sixty German miles distant from Vienna, and sixteen

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\* A Treatise upon the Mineral Springs of Carlsbad, &c. By Chevalier John de Carro. Leipsic, 1842.

from Prague, is situated in a deep and narrow valley, between granitic rocks, on both sides of the Teple, which falls into a larger river, the Egra, very near the town. The houses are all built on the declivity of the hills and on the banks of the Teple. Those hills, beautifully wooded, offer innumerable and well kept walks, the greatest variety of prospects, and an interesting field to lovers of geology and botany. To no place can be better applied than to Carlsbad, the following line of the celebrated Darwin, in his *Botanic Garden*—

“ ‘Rocks rise on rocks and fountains gush between.’ ”

“ According to the last observations of the Rev. A. David, Royal Astronomer at Prague, Carlsbad is situated 50° 19' 38" lat., 30° 32' 47" long., and 182 fathoms above the level of the sea near Hamburg.

“ Invalids coming from Prague were formerly obliged to descend the mountain, at the foot of which the town and the springs lie, by roads fitter for goats and woodmen than for heavy carriages. During one of the most calamitous periods of his reign, from 1804 to 1805, the late emperor Francis had a magnificent serpentine *Chaussée* constructed at the expense of 160,000 silver florins, by which the town is approached with so much ease, and offers so delightful a prospect, that visitors have been known to say, the pleasure this gave them was worth the journey hither.” “ The great improvement of the roads has facilitated the establishment of *stage* and *mail-coaches*, under the name of *Eilwägen* (velocifères). For those who, from motives of health, are obliged to travel slowly (à petites journées), *veturini* (Landkutscher) are every where to be had. From Prague to Carlsbad, for instance, the *Eilwägen* requires fourteen hours, whilst a *Landkutsche* with the same horses, and loaded with baggage, requires two days.

“ According to an old custom, sometimes annoying to sick people who lodge on the *Market Place*, but pleasing to those who enjoy the daily increase of visitors, watchmen, posted upon the Tower-Gallery, announce with trumpets, more or less numerous, according to the size and elegance of the equipage, the arrival of the new comers, upon whom they wait the next day, for a remuneration, which is left entirely to the good will of the visitor, who has also, for the next evening, another tribute to bestow for a regular *sérénade*, given under his windows, by performers not unworthy the philharmonic renown of Bohemia.

“ During the whole season, the names, quality and domicile of visitors are inscribed on a list (*Cur-List*), published almost daily, the price of which is fl. 1. 24 x. silver, besides 13 kr. for the insertion of the name.

“ Since 1830, an elegant reading-room for German, French, and English newspapers, has been opened for the moderate price of 40 cruetzers a week.

“ Money matters are in general arranged by Messrs. Bernard Gottl and Son, who are connected with London bankers and others, in the principal towns of Europe. Their counting house is in the *German hause* (im deutschen Hause).

“ During the season there are two booksellers at Carlsbad.

Pianos and guitars can be hired ; a theatre, concerts, balls, and other amusements are not wanting ; but walking, riding and driving, offer to visitors the greatest variety of resources. The company being composed of people of all ranks, of all nations, religions, and professions, every one chooses, or should choose, what is most convenient to himself, rather than seek an equality, as impracticable at Carlsbad as any where else. Those who do not bring their own horses and carriages, find here caleches, a few saddle-horses, and donkeys. Carlsbad being nothing more than a genteel hospital, is by no means a place of dissipation. The amusements are of a quiet and rational kind ; the necessary early hours for attending the wells in the morning prevent late ones at night ; the strict prohibition of hazard ; the absolute necessity of submitting to a sober diet, and of taking much bodily exercise, have introduced very regular habits into society, and more than one gastronome and hard drinker, has begun at Carlsbad to understand the incalculable advantages of temperance in eating and drinking.

“ We have already mentioned the internal and external cleanliness of the houses, some of which are very small, others large enough for the accommodation of numerous families. The most elegant and fashionable are on the *Market Place*, the *Mühlbad Gasse*, and on the *Wiese*, and more expensive than those situated in the higher and more remote streets. The new row of houses in the *Eger-Strasse* offers to visitors many large and well furnished apartments, as well as good stables. In most houses the beds are good, at least as good as in any parts of Germany, though many tall visitors wish them longer, and the coverlids broader.

“ The price of lodgings varies with their situation and with the season, which begins on the 1st of May, and lasts to the end of September. It is not rare, however, to see patients at Carlsbad in April and October. The most crowded period is from the 15th of June to the 15th of August, and of course the price of lodgings is then much higher than during the first part, and particularly, than during the latter part of the season, when the owners, having nothing more to hope, take lodgers almost at any price. The price is always fixed weekly. Large families will act prudently in securing their lodgings before their arrival, and can apply for that purpose, to the physician to whom they are recommended ; in which case it is indispensable to fix with precision the day of the arrival, the length of the stay, the number of rooms and beds, servants, horses, &c. Those who have not taken such precautions will find in general temporary accommodation at the principal inns, such as the *Golden Shield*, the *Prince William of Prussia*, and the *Paradise*.

“ As to living, visitors coming without their own cook, find numerous eating-houses and restaurants, where they can go or send for their dinner. These houses are frequented by ladies as well as gentlemen. The *Salle de Saxe*, the *Posthof* and the *Freundchaftssaal*, where the dinner is at so much a head (in general one florin silver), are frequented by the best company ; but those who prefer to choose their dishes can dine *à la carte*, and equally well, at the *Golden Shield*,

the *Bohemian Salle*, the *Three Pheasants*, the *English Coffee-house*, the *Ville de Paris*, &c. &c. The *Blue Pike* (*Blaue Hecht*) on the *Weiese* sends out dinners, but does not receive company. The cookery is plain, and nearly alike everywhere, and no invalid has reason to fear the temptation of dishes contrary to the rules of the cure, about which all inn-keepers have traditional and almost invariable principles, suggested by the medical faculty. Besides, regimen and diet are always a subject of advice at the first interview between the physician and the patient.

"Of the articles of diet allowed, beef and mutton are of good quality, veal, chickens and pigeons are seldom properly fed; venison (deer) and ducks are always to be had; partridges, pheasants and hares in their season; pork and goose are forbidden; vegetables are neither plentiful nor cheap, and not at all salutary. Carp, pike, and trout are in general to be had, but particularly on fast days, and all that class of farinaceous compounds, called *Mehlspeisen*, are perfectly well understood at Carlsbad. Made dishes and scientific ragouts are never to be met with, except when particularly ordered. Salad and raw fruit are not allowed. Breakfast will be treated of later.

Living, in general, is cheap, for those who are under the obligation of attending to strict economy, though innumerable occasions offer daily of spending money, as every where else. A tolerable dinner *à la carte*, of three or four dishes, with a bottle of good beer, can be had for half a florin (30 creutzers). For the sake of those innumerable invalids, who weigh and calculate what they eat, and even for those who like several dishes, but little of each, half portions are to be had in many eating-houses.

"The citizens of Carlsbad are in general civil and obliging, and strangers, travelling without servants, find in every house the necessary attendance. As in many other parts of Germany, it is the custom to hire a man for the special purpose of brushing clothes and cleaning boots and shoes. They are industrious; all sorts of workmen and tradespeople are found amongst them, and they have even acquired some renown in the manufacture of fire-arms, cabinet-work, cutlery and pins; the incrustations produced by the saline parts of the waters, called *Sprudel stones*, are an object of industry. A number of tradesmen of all sorts come, during the season, from Prague and Vienna. Bohemian glasses, hyaliths, the pewter-ware of Schlaggenwald, fill very beautiful shops, and all the china and pottery manufactures of the kingdom are near Carlsbad, such as the Hammar, Elhogen, Dalwitz, Alt Rolau and Schlaggenwald.

"The china or earthen cups, used by the water-drinkers, vary in beauty and price, but are of the same size, viz. about six ounces. Dials, with moveable hands, assist the memory of those who drink a great number of goblets.

"Carlsbad has its magistracy, and burgomaster; but during the season the Government of Prague delegates a commissary for the inspection of the place, to whom strangers must apply about passports, and in any contest that may arise between them and the inhabitants, in short, in every case where the assistance and decision of justice are required.

"Religious tolerance being complete in the Austrian dominions, I shall remark, for the information of those who might not be aware of it, that a part of the Catholic churchyard is allotted to Protestants, who are buried openly, and allowed to have their own funeral service performed by a clergyman of their profession, if their friends wish it, and if there happens to be one at Carlsbad among the visitors. Many tomb-stones have been erected in that part of the churchyard, by non-Catholics, to their deceased friends. When English clergymen have happened to be among the visitors, the Sunday service has been celebrated in any room chosen for that purpose; but hitherto no fixed arrangement has been made for the regular performance of public worship in English.

"*The Wells*.—All the hot springs of Carlsbad, rising from the same natural reservoir, issue from different orifices; each has its name and its temperature. Their number has often varied, some of them having appeared, disappeared, and reappeared. Others, on both sides of the river, are found in several houses, and might, if necessary, be adapted to medical use. We have now the *Sprudel*, the *Hygiea*, the *Neubrunn*, the *Marktribrunn* (since March, 1838), the *Mühlbrunn*, the *Thereseibrunn*, the *Bernardsbrunn*, the *Schlossbrunn*, and the *Spitalbrunn*.

"The boiler, which supplies them all, formed by the mineral sediments of the water itself (the fragments of which are called *Sprudelstones*), has a depth, thickness, extent and ramifications, which no human eye can scrutinize, and the enormous clouds of hot vapour escaping from every accidental or artificial opening, will probably baffle all attempts to ascertain the dimensions of that wonderful laboratory. Such trials were made in 1713 and 1727, after a rupture of the boiler had taken place. The various boring and probing instruments penetrated through the calcareous crust, from one cavity to the other, till they reached at last an immense reservoir, the boundaries of which could not be ascertained with thirty fathoms length of poles joined together, directed towards the *Market Place* and the *Hirschensprung*. That a great part of the town stands upon these cavities is sufficiently demonstrated, whenever the foundation of a new house is laid; copious streams of carbonic acid gas are, moreover, incessantly seen bubbling in the river near the wells.

"The *Sprudel*, situated on the right bank of the Teple, in the centre of the town, has a temperature of 60° Re. or 168° Fahr. It has various orifices, but two only are adapted to public use. One of them is exclusively called the *Sprudel*; the other, named *Hygiea*, on account of the statue of that goddess, placed near it, flows in a regular stream out of a pewter pipe. Its vapour supplies the steam-baths. The broad square stones and long boards, placed in the river, over the thermal caldron, answers the purpose of a cuirass against the large masses of ice and floating trees, which, in their rapid course, when a thaw or an inundation takes place, might, like battering rams, break through the crust, and disturb the equilibrium indispensable to the regular spouting up of the mineral water. In order to prevent such ruptures, the closing of which is always slow, troublesome, and

expensive, the incrustation of the orifices of the Sprudel is removed four times a year by a boring apparatus. The Sprudel water boils eggs hard, and has been employed, since time immemorial, for scalding poultry and pigs, and other such purposes, more economical than grateful to the eye. The difference of temperature between fountains, coming from the same reservoir, is generally accounted for by the various distances of their orifice from the great focus, and by the warmer or cooler soil over which the water circulates in the impenetrable meanders of this aquatic volcano.

"The springs of the *furious fountain* (as Frederic Hoffmann called the Sprudel), the truest emblem of perpetual motion, are in general explained in the following manner: The upper parts of the reservoir fill with carbonic acid gas, escaping the more freely from the hot fluid mass, as the pressure under which it lies diminishes in proportion to the evaporation of the gas. In this free state, it accumulates in the upper part of the cavity; when considerably increased, it depresses the surface of the water, which rushes out of the same orifice; and these two elements, under the form of vapour, escape together, giving in a minute, without intermission, eighteen or twenty ebullitions, from four to eight feet high. A hollow, unequal, and subterranean murmur accompanies the emission of so much water, which, divided into myriads of globules, falls back into the same vessel (now in the form of a large artichoke) from which it springs, and is conducted by lateral pipes to the Sprudel-baths, to the evaporating salt-apparatus, and to the river flowing near it. The height of the springs can be more or less increased, according to the breadth and length of the square wooden pipe, through which the water ascends; but it remains nevertheless a springing fountain, even when left in a state of nature, deprived of its outward constructions. A persytle, a long colonade, the elegant hall of the bath-house, a flower-garden, with a good band of music, offer to innumerable drinkers an agreeable walk, during the whole season, whatever may be the weather.

"The Mühlbrunn (45° R. or 135° F.), the Marktbrunn (46° R. or 137° F.), the Neubrunn (50° R. or 147° F.), and the Theresienbrunn (43° R. or 132° F.), on the left side of the Teple, communicate together, and are surrounded with elegant buildings, colonades, and gardens. The Schlossbrunn (40° R. or 122° F.) is much less frequented on account of its high situation. The cavernous Bernardsbrunn is scarcely accessible to drinkers, but its abundant water, nearly as hot as the Sprudel, is led into a reservoir, necessary for cooling the Mühlbrunn baths. Some ophthalmic patients use its vapour, mostly at random, without medical advice. Aware of the dangerous consequences of such an empirical application, I suggested to an eminent oculist, Dr. Ryba, of Prague, the necessity of reducing to rational principles the indications and counter-indications, according to which that vapour may be beneficial or hurtful (*Almanach de Carlsbad*, 1834, ch. viii).

The Spitalbrunn supplies the baths of the Saint-Bernard's Hospital, and is not frequented by other invalids.

"Whichever of the springs patients are recommended to, they

regularly come from six to eight o'clock in the morning. Some of them drink in the evening. The interval prescribed between one beaker and the other being a quarter of an hour, scarcely more than nine or ten beakers can be taken during two hours. Such a quantity proves sufficient in most cases; many patients, however, going far beyond that number, begin earlier. Few places in Europe offer, upon such a small spot, a more remarkable diversity of ranks, professions, countries, tongues, religions, and costumes. Medical doctrines, rational or empirical, never had any influence upon the number of its visitors, which has always been increasing. Though many invalids, unable to walk, drink in their lodgings, by far the greater number attend the wells:

“*Dulcius ex ipso fonte bibuntur aquae.*”

“Abdominal diseases being here the most frequent, no where, perhaps, can jaundice and sickly complexions be seen under a greater variety of forms and degrees. Most people, attributing to the Sprudel an imaginary supremacy over the other springs, melancholy, misanthropic, and hypochondriacal patients show a particular predilection for that fountain. If those sickly and sinister faces offer a painful sight, rapid changes take place, and the same invalids, who were on their arrival seen walking about pensive and bent, avoiding company and exciting commiseration, begin often very soon to look better, to speak with gratitude of their improvement, and gradually to contract more sociable habits.”

“*Complaints which Carlsbad can cure or relieve, and those which it aggravates.*—It would be quite impossible to describe all the complicated disorders, which we treat at Carlsbad, and upon which we are called to give our opinion. What has been said in the preceding chapter will, however, sufficiently point out the cases in which our springs can be recommended. Chronic affections presenting in general an immense variety of forms and modifications, we cannot define with precision where the efficacy of these waters begins and where it ends. Practical tact and a thorough investigation of the symptoms must help practitioners in their judgment; but few mistakes will occur, if they pay due attention to the following classification, given sixty years ago, by David Becher, which, in spite of all the vicissitudes of medical doctrine and nosological nomenclatures, remains still the most rational. I shall add to it some miscellaneous observations, without systematic order, upon various essential points of our practice.

“The virtues of the Carlsbad waters, says Becher, can be reduced to five principal effects.

“1. They correct the weakness of the *primae viae*, free them from matters collected and accumulated there, even when inveterate.

“2. They resolve and dissipate obstructions, particularly those of the abdomen.

“3. They correct, change, evacuate the acrimony of the blood, or drive it towards the lower extremities or the surface of the body.

"4. They expel from the urinary passages, sand, gravel, and calculi.

"5. They have often proved very beneficial in many serious disorders, produced by occult cases, difficult to point out.

"The last paragraph shews particularly the great utility of providing patients sent to Carlsbad, with a good history of their complaints, which are in general complicated, obstinate, and arise from a variety of causes, such as climate, mode of life, &c. Such invalids, careless about the past, lay often the highest importance upon insignificant circumstances, and say nothing about those which would throw light upon the case. As to instructions, about the mode of drinking, bathing, *douching* and steaming, as well as about regimen and diet, which of course should be entirely regulated by the medical adviser to whom they apply at Carlsbad, such instructions, written, or even *printed*, which many physicians think proper to give to their patients, are absolutely useless, and often attended with disagreeable consequences, if there happens to be some diversity of opinions between those instructions and the precepts of the local physician. Very often such a difference, which appears of great importance to the patient, is of none at all, such as the choice between two sources of nearly the same temperature. We have more than once seen invalids, to whom a fixed series of springs, or the simultaneous use of several, had been prescribed at home or on their road, so excessively alarmed, if we prescribed to them another, or in another succession, that they have suspended the treatment, and lost time, in order to write to their physician, to settle such an insignificant matter. We must, however, acknowledge, that since so many chemists and physicians have written upon the identity of the constituent parts of our different springs, the old prejudices are gradually giving way to more rational principles, and that the *hocus pocus* on this subject is much less in favour than formerly at Carlsbad, where it would have never existed, if Becher's principles had been better attended to by his successors.

"The worst part of our duty is to be consulted for diseases which Carlsbad can only aggravate, and to find ourselves in the painful necessity of declaring to such patients, that they would have done better to have staid at home. Such mistakes, caused by an imperfect knowledge of the effects of our waters, are but too frequent. Supported by hope the journey to the wells was at least tolerable; but deprived of all further illusion, the way home is dreadful. More than one arrive here every year to be buried, without having been able to drink a single drop of the water, from which they expected recovery, or at least great relief.

"The waters never agree with an inflammatory state, general or partial, nor with symptoms of orgasmus, congestions and vertigo, which must be removed by appropriate means, before the water is administered. Should such accidents take place during the cure, it must be interrupted.

"The waters are decidedly hurtful in every degree of pulmonary phthisis; to individuals disposed to hæmorrhages, and still more,

during hæmorrhages; they accelerate and increase the pulsations and dilatations of the blood-vessels, and consequently hasten the rupture of aneurisms; they aggravate all syphilitic complaints, but they can be tried as a touch-stone, in doubtful cases, of the presence of that morbid principle, which they generally rouse into activity if dormant. I have seen them, however, stop chronic and indolent blenorrhæas, after the inflammatory and painful period had ceased, when the gleet does not proceed from strictures of the urethra, indurations of the prostate, and other organic disorders of the urinary passages.

"They aggravate scorbutic affections, and often accelerate the disorganization of scirrhus of the abdominal organs when too far advanced. They are in general dangerous in dropsy, though we have seen them succeed in a few cases of anasarca, without visceral indurations, of too long standing, and in some great enlargements of the mesentery, and particularly of the omentum. If a physician thinks himself justified in trying them in dropsical cases, the utmost circumspection and very small doses are necessary. The most delicate part of our practice is to draw a line of demarcation, and to determine, in abdominal diseases, whether the part affected is already in a state of disorganization; and, where consumptive and hectic symptoms have begun, whether the waters can be tried, or whether we must refuse them to such individuals."

"From 1826 to 1841 inclusively, viz. during sixteen years, forming the whole period of my settlement at Carlsbad, I have counted and named in my *Almanacks* for 1836, 1837, 1838, 1839, 1840, and 1841, among our visitors;

"118 princes and princesses of sovereign houses, among whom one emperor and two empresses, one king and three queens.

"24 archbishops and bishops.

"139 statesmen, viz. ministers, ambassadors, envoys and governors of provinces.

"311 field-officers, amongst whom 49 Austrians, 141 Russians, 45 Prussians, 15 English, 10 French, including two marshals, and 51 generals of various powers.

"23 captains of the British royal navy.

"223 celebrated authors, poets, physicians, and other eminent scientific personages, including four ladies.

"70 distinguished musicians, painters, sculptors, &c.

"21 remarkable persons belonging to none of the other divisions.

"1124 physicians and surgeons, either for their own health, or in company with patients.

"If these numbers present a striking catalogue of persons distinguished for intellectual powers, those who come to Carlsbad merely for their amusement, and for the sake of finding there an agreeable society, may expect to attain their object, and those who consider that celebrity is seldom acquired without great exertions, and mostly at the expense of health, will naturally conclude that the renown of our springs for the removal or relief of diseases brought on by too close an application to the mental faculties, and by a sedentary life, must

be well founded, if persons so remarkable for superior intellect, in general most inclined to doubt, grant them so decided a preference."

*Remarkable Case of Retention of Urine.*—The patient whose case is about to be related was a man, 58 years old, an ironmonger, formerly a soldier, rather tall, thin, and of an extremely nervous habit. Owing to a remarkable peculiarity of the urinary organs, this man could never drink the smallest quantity of wine without instantly experiencing an irresistible desire to pass water, accompanied with violent and agonizing pain referred to the neck of the bladder. This peculiarity manifested itself when he was about twenty-five years of age, without any assignable cause, and has continued up to the present, notwithstanding the different changes in life he has experienced, and the great fatigue he underwent while in the army during the wars of the Empire. For many years he never drank any thing but water. In 1839 his business obliged him to leave Paris; and being invited by other merchants to breakfast with them, was obliged, lest he should give offence, to break through his resolution, and take some wine. He had scarcely swallowed two glasses of sherry, when the desire to pass water came on, and, as before, was accompanied by excruciating pain and the sense of constriction at the neck of the bladder. Some hours after, the patient, having frequently tried ineffectually to empty his bladder, sent for the physician who reports the case, when a catheter being passed, about three pints of limpid urine were drawn off. For some days after he suffered from frequent calls to pass water; but at the end of ten days he was perfectly well, with the exception of a slight uneasiness at the neck of the bladder. Two years after, having again committed the same indiscretion, he was affected with similar symptoms, and was obliged to resort to the same means for relief. On this occasion, however, the bladder did not so soon regain its functions, and had to be emptied by the catheter three times; on each occasion about three pints of urine were taken away.

The treatment which was employed after the introduction of the catheter, consisted of leeches to perineum, hip baths, and poultices over the pubis.—*Abridged from the Revue Medicale for June, 1842.*

*Assafoetida in Hooping Cough*, by Reiken.—Without wishing to claim for this medicine the character of a specific in hooping cough, M. Reiken asserts that he has found it more useful than any other, in three epidemics of the disease which he has witnessed. But in order to ensure success, we must select the proper time for its administration, and this is after the stage of fever has passed over. It is easily borne by children of strong constitution, and even better by those of a nervous or lymphatic habit. The spirits and strength are quickly restored under its influence. As it is difficult to administer this medicine by the mouth to children, he employs enemata, and gives the following formula: Take 15 (centigrammes\*) of assafoetida

\* Gramme is equal to 15 grains English measure.

mixed with a sufficient quantity of yolk of egg, which dissolve in from 125 to 250 (grammes) of water. Divide this into ten or twelve *lavements* for children under a year old ; into four or six for those of three years old ; two or three for those older than that. During the first five or six days two *lavements* should be administered daily ; by giving one at bed-time we secure an easy night's rest to the sufferer. If diarrhoea should come on, we can easily stop it by increasing the quantity of the yolk of egg, or by adding either starch or mucilage of gum arabic ; if there be tenesmus we inject some olive oil into the rectum, and add a little to the enema. M. Ricken sometimes employs assafoetida externally, in the proportion of four grammes to thirty grains of lard or oil. Assafoetida is not so useful in the third stage of the disease, and ought to be combined with tonics.—*Journal des Connaissances Médico-Chirurgicales*, for July, 1842.

*Pommade of Oxide of Zinc in Eczema, Impetigo, and Ecthyma*, by Martin Solan.—In the above disease Martin Solan has experienced great success from the employment of the following ointment :

Axungiæ . . . . . 30 grammes.

Oxidi Zinci Alb. . . . . 1 vel 3. M.

This ointment to be rubbed on the affected part morning and evening, with a sufficient quantity of pomatum. The three grammes of the oxide give the compound considerable consistence. It should not be employed until desquamation has been established and all irritation removed, no matter whether eczema extends over a large portion of the body, or be confined to the backs of the ears, to the armpits, to the bend of the elbow, wrist, or knee ; in either case it is *seldom this medicine fails* in removing the itching, in diminishing the redness and local secretion, and affecting a speedy cure, particularly if combined with baths.

In some cases of chapped nipple, or slight excoriations of the vulva, this pommade has been found extremely useful. Impetigo and ecthyma have yielded to it with equal rapidity. We ought here, as in every other instance, to employ, along with the local treatment, means calculated to improve the general health.—*Ibid.* June, 1842.

*Iodine for the Dropsy after Scarlet Fever*.—Mr. Copeman, of Coltishall, writes in the Medical Gazette, in reference to dropsy after scarlet fever :—

“ From having observed its power of strengthening the constitution, with, at the same time, a tendency to prevent inflammation and to increase absorption, I was induced to make a trial of iodine. I prescribed it in the form of solution recommended by Lugol, viz.

℞ Iodin. ℥j. ; Iodid. Potass. ℥ij. ; Aquæ ʒ vij. M. ft. Solutio Iodin. concentr.

“ Of this solution I ordered from 5 to 10 drops for children, and from 10 to 20 or 25 to adults, three times a day in water. In the first case in which it was used it rapidly effected a cure : in consequence of which I prescribed it in every succeeding case that presented itself, and with the same complete success.”—*Med. Chirurg. Review*.

## TO THE EDITORS OF THE DUBLIN MEDICAL JOURNAL.

GENTLEMEN,—Several professional friends who have witnessed the success of a great number of my operations for the cure of squinting, for the last fifteen months, have recently called my attention to the following paragraph, which appeared in the May Number of your Journal, page 288:

"We are," says the author of a critique on Mr. James Adams's letter on Amaurosis, "heartily tired of the strabismus operations, and from what we have seen of them, scruple not to say, that however successful at the time of their performance, not one in ten remains cured after six months." I will not rest here to review the writer of the above, not even to inquire from what number of cases which fell within his own observation he may have drawn this sweeping conclusion—or to ask whether it is founded on the number of operations he has himself performed, or only from reviewing the labours of others. I deem it, however, but justice to the merits of the operation, as a means of removing a most unpleasant (and by imitation frequently acquirable) deformity; to my friend and preceptor Professor Dieffenbach, who first put it into practice, and to myself, to make the following statement to the Profession, through the pages of your valuable periodical.

Since the first of May, 1841, I have operated in this city on above 120 cases of Strabismus. In these cases the periods that have intervened between the operations and the moment at which I write, vary from fourteen months to one day, and the success that has followed is, as far as I can at present determine, 85 per cent. at the minimum. Those instances that have proved unsuccessful were pronounced to be so at the time of the operation, *but in no one instance have I observed a relapse*, although some of them were most unpromising, and several had been previously operated on unsuccessfully by others.

Numbers of the persons operated on, from ten to twelve months ago, are still resident in Dublin, in whom, several surgeons were unable to pronounce which eye had been affected. Drawings of many of the cases, made before, and at different periods after the performance of the operation, faithfully exhibit the amount of obliquity removed. The operations have been witnessed, from time to time, by at least twenty of my professional brethren, several of whom have subsequently observed their permanent success.

To those, and to the operations themselves, I confidently appeal for a refutation (as far as I am concerned) of the paragraph above quoted.

In fine, without claiming to myself anything in the operation more than closely following the path marked out by its first performer, rendering it a little more simple, and judging of the cases, in which, according to the present state of knowledge, it appears applicable, I scruple not to say, that from what I have seen of the operations (amounting to some hundreds), they are, *when properly performed*, more fortunate than any others in surgery, incurring, as far as we yet

know, no risk, causing little pain, occupying in the generality of cases not more than three minutes, being unattended by the high inflammation so frequently the consequence of other operations on the eyes, and offering a statistic of 80 per cent. cured upon the total number of cases I had an opportunity of observing.

I have the honour to be, Gentlemen,

Your obliged and obedient Servant,

W. R. WILDE.

August 6, 1842.

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TO THE EDITORS OF THE DUBLIN MEDICAL JOURNAL.

GENTLEMEN,—In the last Number of your valuable Journal we find you have inserted the Report on the condition and treatment of the children in the North Dublin Union, drawn up by Drs. Kennedy and Corrigan. In that Report no allusion whatever is made to the opinions or recommendations of the medical officers of the establishment. To a person unacquainted with the circumstances of the case, this omission is calculated to do us injury; although we entirely acquit the gentlemen who drew up the Report of any such intention. The truth is, that, with scarcely an exception, the recommendations put forth in this document were but the echo of our previous representations, the importance of which was not sufficiently felt at the time they were made. The terms of the appointment of Drs. Kennedy and Corrigan explain the cause of the omission of any allusion to our opinions, and entirely exculpate them from any unkind feeling towards us. They were directed by the Commissioners to make the investigation, unattended by the medical officers of the Institution; and although they did examine, as we understand, most minutely every thing connected with the medical department, and obtained information from the Master, Matron, Apothecary, and Nurses of the several wards, they held no communication with us, except a friendly note at the beginning of the inquiry, to explain the reason of their not calling upon us to attend them. The remarkable coincidence of opinion between us and two gentleman of such standing in the profession, is not a little gratifying to our feelings.

We remain, Gentlemen, your obedient Servants,

JAMES F. DUNCAN, M.B. } *Medical Attendants to the*

FRED. KIRKPATRICK, M.B. } *North Dublin Workhouse.*

August 6, 1842.

THE  
DUBLIN JOURNAL

OF  
MEDICAL SCIENCE,  
1 NOVEMBER, 1842.

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PART I.  
ORIGINAL COMMUNICATIONS.

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ART. VI.—*Further Observations on the Chemical Constitution and Therapeutic Agency of the Liquor of Hydriodate of Arsenic and Mercury.* By M. DONOVAN, Esq., late Professor of Chemistry, Materia Medica, and Pharmacy at Apothecaries' Hall, Dublin.

IN a former Number of this Journal, I introduced to the notice of the Medical Profession, and gave a process for preparing, a liquid compound of iodine, arsenic, and mercury, and proposed it as a remedy in lupus, lepra, and the several forms of psoriasis. It has now come into general use for these and other diseases.

In the Journal de Pharmaciè for December, 1841, there is a notice of this preparation, by M. Soubeiran, containing observations on its chemical constitution and preparation. He states, that being instructed to prepare a quantity of this liquor for the use of the Hôpital des Vénériens, he repeated my process many times, but never with success, some arsenic always remaining undissolved.

In these trials, he followed the instructions given in the French translation of my memoir, which appears to be accurate in all respects but one. I directed a certain measure of alcohol; M. Soubeiran quotes "a little alcohol." Trivial as this difference appears to be, it may cause a failure; if too little be used, the mass, when it arrives at "a pale red colour," will not have suffered sufficient trituration to ensure union of the elements.

The elements should be presented to each other in a state of the most minute division; iodine cannot be powdered; it must therefore be dissolved; and as it is little soluble in water, alcohol ought to be used. This method brings the particles of all the elements into the contact necessary for the exertion of chemical affinity. But the alcohol must be in such quantity as will not too quickly evaporate and leave the mass dry before the elements have united perfectly. Any abridgment of the time during which the trituration ought to be continued, tends to leave undissolved arsenic; and if the alcohol be diminished, so also is the time of trituration. In this way, M. Soubeiran may have been misled by the French translation. After having manufactured several hundred pounds of the liquor of hydriodate of arsenic and mercury, I am prepared to affirm, that if my original instructions be exactly complied with, and with pure materials, the process will not fail, and the residuum left undissolved will not exceed  $\frac{1}{36}$ th of the whole weight of ingredients employed.\* Thus, when for the sake of exact observation, I prepared ten times the quantity described in my memoir (in all five wine-pints), the residuum, when perfectly dried, was but two grains; although previously to filtration, it was very voluminous. When those two grains of residuum were introduced into a sealed tube, and the sealed end was heated until the glass began to melt, not a particle of arsenic sublimed; and when the matter was withdrawn, mixed with black flux, and again heated until the glass began to melt, nothing sublimed that was easily disco-

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\* In my first memoir, I suggested the addition of a small quantity of hydriodic acid to hold dissolved a minute quantity of whitish powder, which passes the filter and remains long suspended.

verable by the unassisted eye; but a magnifier showed a few exceedingly minute globules of mercury, along with a narrow band of a bright film, so thin, that I could not clearly determine whether or not it was metallic. Even if it were, the quantity of arsenic could not exceed one-tenth of a grain. To succeed so perfectly, long-continued incessant trituration of all the solid materials with the alcohol is required. It is no wonder then that two grains of residual impurities, or even more, should remain after the solution of so large a quantity as 713 grains of solids, even though these were in a state of what we call chemical purity; for probably we never attain absolute purity by any of the processes resorted to for removing foreign matter.

I have certainly, in a few cases, had a much larger residuum than that above described. This I attributed sometimes to my not having removed the water sufficiently from the iodine, the ratio of the latter being thereby diminished; sometimes to insufficient trituration; and sometimes to the presence of impurities which my processes did not remove.

M. Soubeiran, finding that the whole of the arsenic did not dissolve, supposed that the ratio of iodine directed in my memoir is insufficient to form those iodides which are proper for entering into combination; for he says, that the quantity of iodine "is nearly sufficient to form biniodide of mercury." I founded my estimate of the iodide of arsenic on the calculations and analysis of Plisson; and of the biniodide of mercury on the analysis of Gay Lussac, adopted by Dr. Thompson. It will be found that the quantity of iodine directed in my original memoir corresponds with the estimates given by these chemists; and experiment has convinced me, over and over, that it is sufficient for effecting a solution of the active ingredients, provided the proper precautions are taken. Thus the quantity of the respective articles employed by me were,

	Grains.	Grains.
Arsenic,	6.08 +	Iodine, 30.24 Plisson.
Mercury,	15.38 +	Iodine 19.38 Gay Lussac.
Total iodine	. . . .	49.62

I employed 50 grains for the sake of round numbers. M. Soubeiran, in preference to my method, recommends iodide of arsenic and biniodide of mercury to be dissolved in boiling water; he finds that they dissolve perfectly. Yet between this method and mine there is no difference in the ratio of materials employed; for calculating from data contained in his memoir, the quantity of iodine necessary for the abovementioned quantities of arsenic and mercury would be as follows:

	Grains.	Grains.
Arsenic,	6.08 +	Iodine, 31.70
Mercury,	15.38 +	Iodine, 19.12
Total iodine . . . .		50.82

which is within a grain and one-fifth the same as I employ; and the only difference is, that he uses the two iodides ready-formed, while I form the same substances extemporaneously. If his method succeed, so *must* mine, if the precautions suggested by me be adopted.

M. Soubeiran has been at some pains to reconcile the incongruity obvious throughout my original memoir, of representing the red biniodide of mercury by the name of iodide, and its corresponding peroxide as the protoxide, although the biniodide and peroxide were evidently intended, as appears by the ratio of iodine directed. He truly observes that none other than the biniodide will enter into the combination; and politely abstains from remarking on this singular inadvertence, further than was necessary to relieve himself from the embarrassment which it occasioned.

Making a trivial correction, the old formula and the corrected one will stand thus:

<i>Old Formula.</i>		<i>Corrected Formula.</i>	
	Grains.		Grains.
Arsenic, . . .	6.08	Arsenic, . . .	6.08
Mercury, . . .	15.38	Mercury, . . .	14.82
Iodine, . . .	49.62	Iodine, . . .	49.00
Water eight ounces.		Water eight ounces.	

Hence, one drachm measure of the liquor of hydriodate of arsenic and mercury will, according to the corrected formula, consist of,

Water one drachm.

Arsenious acid one-eighth of a grain.

Peroxide of mercury one-fourth of a grain.

Iodine in the state of hydriodic acid about three-quarters of a grain.

The medical effects, strength, and dose of this medicine remain just the same as they always were.

Dr. Kane, in his *Elements of Chemistry*, page 765, observing upon this liquor, affirms that its component parts are not in a state of chemical combination; for "the iodide of arsenic being decomposed by the water, the iodide of mercury is dissolved by the hydriodic acid formed, whilst arsenious acid exists free in the solution."

This opinion appears to have been negatived by the researches of Plisson; and to these I shall refer in preference to my own inquiries. It is a fact stated in chemical works, that iodide of arsenic, when acted on by water, affords an acid liquor consisting of hydriodic and arsenious acids. But that the arsenious acid should exist *free* in the solution, there is no warrant for admitting; for although arsenious acid acts the part of an acid much more frequently than that of a base, yet it is still a metallic oxide, and in that capacity does sometimes enter into combination as a base, although with very feeble saturating powers.

That it is in a state of combination in the present instance, and not free, appears to be clearly proved by Plisson in the following statements.

"In contact with water, the iodide of arsenic presents phenomena which vary with the ratio and temperature of the water employed. If cold water be used, in quantity incapable of dissolving all the iodide, the water is undoubtedly decomposed, since it forms a soluble acid-hydriodate, and an undissolved sub-hydriodate. But if the cold water be in quantity sufficient to

dissolve the iodide completely, a yellow solution results, which I consider rather as a *neutral hydriodate* than as an iodide in simple solution; although the liquor strongly reddens tincture of turnsol,—a fact which I explain by the weak saturating property of oxide of arsenic. This oxide being moderately soluble, some persons have thought that the above-mentioned solution was but a simple mixture of hydriodic acid and free oxide of arsenic not combined: here are the experiments which I have made to establish the contrary:

“ 1. This solution contained in a bottle exposed to air, and always maintained at the same degree of concentration, does not exhale the odour of iodine; it preserves its amber tint, and does not disengage any vapour capable of colouring the hydrate of starch.

“ 2. If the experiment be repeated, adding to the solution some hydrochloric acid; the yellow tint, after thirty-six hours, becomes deeper; and the starch, suspended at the mouth of the bottle, begins to become blue. After some days the iodine becomes sensible even to the smell.

“ 3. In fine, the solution is yellow, and not colourless, which it ought to be if it represented a mere simple mixture of acid and oxide.”—*Plisson. Annales de Chimie et de Physique*, xxxix. 265.

These facts seem sufficient to refute the opinion of Dr. Kane, that the iodide of arsenic is resolved into hydriodic acid and *free* arsenious acid. Even if the fact were as he represents it, I cannot perceive how it would sanction the application of it to the condition of a solution consisting of iodine, mercury, arsenic, oxygen, and hydrogen, all dissolved in water, and all acted on by a complex play of affinities: and I am not acquainted with facts on which we can ground a decided opinion on the state of combination in which so many and such peculiar elements exist in solution. The constitution best supported, most generally entertained, and most conformable to the theory of the hydracids seems to me to be that the com-

pound in question is what its name expresses,—a liquid hydriodate of arsenic and mercury,—a combination of two oxidated metallic bases with one acid. If iodide of arsenic be converted, by solution in water, into hydriodate of arsenic, the mercurial iodide should, by solution, be equally converted into hydriodate of mercury. That the two solid iodides combine there can be no doubt, for the reasons formerly assigned by me: and that such a combination exists is also the opinion of Soubeiran, who has given it the name of iodo-arsenite of mercury.

It is scarcely worth while to observe on the colour of the liquor of hydriodate of arsenic and mercury. I had described it as yellow. Dr. Kane says it is colourless, but that it soon becomes yellowish-brown by the decomposition of hydriodic acid. During an extensive manufacture of it, I have never procured it colourless, except when the process failed. With me it has always been of a light yellow hue from the first: and so far is it from *becoming* yellow, that, when its colour was purposely deepened by dissolving in it an excess of iodine, a short exposure to light was sufficient to restore its original pale yellow tint. The liquor is also yellow when made according to Soubeiran's process.

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Having now concluded the observations I had to make on the chemical constitution of this salt, I subjoin some new evidences of its therapeutic agency, which I have received since my last publication of cases.

For the information of those who have not already seen the cases furnished to me by Mr. Carmichael, Mr. Colles, Dr. Croker, Dr. Graves, Dr. Irvine, Mr. Cusack, and Sir Henry Marsh, and published in the fifty-second number of this Journal, it may not be amiss to recapitulate the chief facts.

*Extract from Mr. Carmichael's Cases.*

“ In one case of lupus, of ten years' standing, in which great deformity had been occasioned by the disease on the features of

a young lady, on whom all the usual remedies had been tried, the liquor of hydriodate of arsenic and mercury produced most decided benefit, and seemed to put an immediate check to the progress of the malady. In one of my lectures, I stated the case of a man who had lost a great part of the vomer, and in whom much deformity had consequently ensued from an obstinate attack of lupus, who in the course of a few weeks so far recovered, as to be discharged from the hospital apparently well. I perceive there has been no relapse of the disease, as he was told to return to the hospital should any suspicious symptoms make their appearance.

“ In another case in which the nose was affected, and not only the turbinated bones but the vomer had exfoliated, a perfect recovery took place after a three months' perseverance in the remedy.”

*Dr. Croker's Case.*

“ Bernard Delany (about 8 years old) was affected with psoriasis guttata, particularly of the upper extremities. He got ʒii. of the liquor, in an eight ounce mixture, and took ʒiss. of that mixture night and morning. I tried the use of a lotion (equal parts of the liquor and water) on *one arm* for experiment, and the more rapid improvement of that arm was quite apparent. Soon after, the treatment was discontinued; yet the previous use of the remedy had been so efficacious, that when we last saw him we pronounced him cured.”

*Dr. Graves's Case.*

“ Mary Cullen, aged 60, had been affected with psoriasis for fifteen years; the disease, at first mild and confined to a few parts of her body, gradually extended over almost the whole surface of her skin; and when she was admitted into Sir Patrick Dun's Hospital, it presented all the marks of a most inveterate affection. On the 10th of November she commenced the liquor of hydriodate of arsenic and mercury, taking daily three draughts, each containing half a drachm of the liquor. After

some days the medicine was discontinued, as it disagreed with both the stomach and head, but it was shortly afterwards resumed in smaller doses; and when the patient's constitution had become accustomed to it, the dose was gradually augmented, and finally she took half a drachm of the liquor four times a day for about two months. The effects of the remedy exceeded my most sanguine expectations, for it caused an almost total disappearance of the cutaneous eruption."

*Dr. Irvine's Case.*

"It would be tedious to relate the entire history of this case, it is sufficient to say, that he took various remedies, Dulcamara and Plummer's pill among the number, without any benefit, unless temporary relief from itching.

"From the experience of many cases which I had treated without permanent benefit at the *Maison de Santé*, with Fowler's solution of arsenic, iodine, and mercury, separately administered, I was inclined to doubt their efficacy; I therefore determined to try the compound of these three. My patient had now been upwards of three months under treatment, and to say the truth was little the better of all the medicine he had taken.

"He took a draught containing 3ss. of liquor hydriodatis arsenici et hygrargyri three times a day from the 11th of February to the 28th of April. On the 28th of April the disease was quite cured."

*Mr. Cusack's Cases.*

"I have used the liquor of hydriodate of arsenic and mercury freely in secondary venereal eruptions, both papular and scaly. I found the eruptions yield rapidly to its administration in the dose of one scruple to two, three times each day. In two instances the mouth became tender, and a slight salivation followed; but in no case have I observed any unpleasant consequences."

*Sir Henry Marsh's Case, reported by Dr. Burton at Steevens' Hospital.*

"James O'Brien, æt. 12, labouring under a disease having the character of impetigo figurata of strumous origin, covering the face, chest, arms, and thighs; but particularly well marked at the flexures of all the joints. Has been subject for many years to chronic bronchitis, with severe paroxysms of asthma. Curative means were employed, attended with more or less success; but whenever a mitigation of the cutaneous affection occurred; the cough and asthma returned with violence. Means having been employed to alleviate the bronchitic affection, Sir H. Marsh considered this to be a suitable case for an impartial trial of the solution of arsenic, mercury, and iodine (brought before the Profession and prepared by Mr. Donovan), with a view to the removal of the skin affection. The dose administered was fifteen minims twice a day, increased gradually to one scruple, and finally given in half drachms. This mode of treatment was cautiously pursued for somewhat less than a month; with a gradual amendment of the cutaneous disease, which entirely disappeared, without aggravation but rather amendment of the bronchial irritation."

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Since the foregoing cases were published in full, I have received various communications which I insert in the order of their dates.

*Dr. Charles O'Reilly's Case.*

"DEAR SIR,—In the September Number of the Dublin Journal, you invite such members of the Profession as have employed the liquor hydriodatis arsenici et hydrargyri, to acquaint you with the result. In accordance with that request I forward three cases, in two of which the success was complete. The third is considerably improved. Other remedies were employed in all the cases, both by myself and others, such as Plummer's

pil, muriate of mercury, iodine, Fowler's solution of arsenic, vegetable infusions and decoctions, such as sarsaparilla, elm bark, dulcamara and arctium lappa, with local applications in the form of solutions and unguents, without success. The first was a case of psoriasis diffusa, occupying principally the lower extremities. She was a married woman, and in the fourth month of pregnancy. Aware of the peculiar susceptibility of constitution during that period to salivation, &c. as well as the irritability of stomach that usually prevails during the early months of gestation, I hesitated to employ the liquor of hydriodate of arsenic and mercury at first, but finding the disease becoming more troublesome and rapidly extending, I commenced with fifteen drops twice a day in a glass of barley water; the dose being gradually increased to thirty. When she arrived at twenty, which was in about ten days, she was compelled to desist from its use, owing to the sickness it occasioned: but not until the disease had completely disappeared, leaving nothing but a slight tinge on the skin. Three drachms only of the solution were administered.

My second case was one of tinea capitis, of two years' standing, in a boy of eight years old. I caused him to commence the solution as a last resource, having employed in vain the means suggested by Bateman, Planche, and Bret, and the parents using the empirical remedies, such as pitch-caps, ointments, &c. so frequently vaunted. The dose I commenced with was six drops three times a day, which I gradually increased to twelve, the largest given. In the space of one month, and before half an ounce had been administered, the disease had totally disappeared. In the cases related, I also applied the following ointment to the diseased surfaces: equal parts of iodine and citrine ointments, as an adjunct to the remedy, although conscious from past experience of its inefficacy by itself. The last case was one of syphilitic lepra, rapidly improving under half drachm doses three times a day. I have also witnessed its good effects in a case of psoriasis labialis. From my expe-

rience of its good effects in the above-mentioned cases, I have no hesitation in expressing my opinion, that the Profession should feel deeply your debtor for the introduction of so potent a therapeutic agent into the list of remedies.

" I remain, dear Sir, yours, &c.

" CHARLES O'REILLY, M. D.,

" 25, Lower Dominick-street.

" *To Michael Donovan, Esq.*

" 11, *Clare-street.*"

*From the Case Book of the City of Dublin Hospital.*

" George M'Gee, æt. 29, under the care of Professor Williams, was admitted July 14. On both lower extremities and the arms there are several large patches of eruption, covered with a scale of silvery whiteness, elevated above the surrounding cuticle ; but the scale is not so thick as in common lepra, and more resembles lepra papyracea. They are not painful, but exceedingly itchy. New ones, scarcely the size of the head of a pin, but covered with a scale like the larger ones, are scattered over various parts of the trunk and limbs. They spread circularly ; the scale falling off leaves the cuticle below red and tender, and is succeeded by a larger one which goes through the same process. The head, when shaved, disclosed the crown covered with yellow crusts, thicker and harder than those on the extremities.

" Fowler's arsenical solution was prescribed for this man, and after continuing its use for a fortnight, and taking a warm bath twice a week, the eruption is nearly in the same condition as on his admission. The hydriodate of potash was then tried with him, but the lepra resists the hydriodate with the same obstinacy as the arsenic.

The patient was then put on the liquor of hydriodate of arsenic and mercury, five drops three times a day. After *one week's use* the lepra is beginning to yield to this remedy, which has been increased to ten drops thrice a day, and then to fifteen

and twenty drops. Under the use of this preparation the lepra yielded slowly but steadily.

“ Nov. 10. The lepra has disappeared, except three or four half-formed scales on the legs. He now returned to his duty as a sergeant of police.”

*Case from Sir Henry Marsh, reported by Dr. Burton.*

“ James Landrican, æt. 12 years, admitted into Dr. Stevens' Hospital, December 16th, 1840, under the care of Sir H. Marsh, labouring under a severe form of psoriasis guttata, manifestly of strumous origin; the eruption being most abundant upon the legs from knee to ankle, and upon the arms from elbow to wrist. States that he has been subject to this disease for two years; that it disappears at intervals from some parts of the body, while it shows itself on others; that since its first appearance he has not been entirely free from it; that none of his family labour under any similar affection; his general health is good; bowels rather inclined to be constipated; skin rough and anserine; perspiration very scanty; no internal organic disease can be detected. Sir H. Marsh considered this a suitable case for the exhibition of the liquor hydriodatis arsenici et hydrargyri, prepared by Mr. Donovan.

“ The patient took fifteen minims three times a day. This was continued during thirty-nine days from date of admission, without producing much apparent effect. The dose was then augmented by fifteen minims per day, and he was directed to apply a lotion two or three times a day to the eruption, consisting of equal parts of the liquor of hydriodate of arsenic and mercury and distilled water. He was also placed in the vapour bath every second day. This treatment was continued until the sixty-fourth day from admission, at which time the eruption had gradually but wholly disappeared: the gums showed traces of the mildest insalivation; the general health was much improved; appetite good; skin softer; perspiration more free. He was

discharged February 27th, and when last seen, three months from that date, he had experienced no return of the disease."

*Dr. Robert J. Hickson's Case.*

*Dingle, December 5th, 1840.*

"I feel great pleasure in bearing testimony to the happy results which followed the administration of the liquor of hydriodate of arsenic and mercury in the cases which came under my observation. In an indolent ulcer on the temple of ten years' standing, in which the granulations were almost gristly, I tried various stimulants and escharotics, without the least benefit, and at the same time having recourse to constitutional remedies; I then administered Mr. Donovan's liquor, in the manner prescribed by himself, as an internal medicine and as an external lotion, which completely changed the character of the ulcer, it assuming a more healthy appearance, and secreting kind pus. In less than three weeks there was a perfect cure effected. In another ulcer on the instep, in which there was great irritation, I applied the lotion, and in two or three applications the irritability was effectually destroyed, and the ulcer healed by mild dressings. I have also tried its efficacy in a case of sibbens, in which there were high fungous excrescences from the ulcers, as an external application, and at the same time gave it internally. In this case, I have also witnessed the same beneficial results, cutting down the excrescences, and completely eradicating the affection from the system.

*Dr. White's first Case.*

*"Rostrevor, Jan. 26.*

"MY DEAR SIR,—Mary Aylmer had been afflicted with that form of disease, called psoriasis diffusa, from the period of puberty, her age being now 18, a comely, well grown girl, but of strongly marked strumous diathesis. The entire of the body, with the exception of the face and hands, covered with

the scaly patches, rough, chappy ; the cuticle dry, red, and here and there deeply furrowed ; the abdomen and thighs completely covered. She described her sufferings at night as intense, the greater part of which time she spent in scratching the inflamed skin. She had consulted many doctors with occasional, temporary (only) benefit. I commenced the treatment by opening the bowels, a full bleeding from the arm, and the warm bath, which last remedy was occasionally used during the course of treatment : she then commenced the use of your solution. She consulted me on the 18th of April, and continued the solution without any other remedial treatment than that above-mentioned, and on the last week of June she presented herself perfectly cured, and in the possession of excellent health and spirits.

“ Most faithfully yours,

“ JOSEPH D. WHITE.”

*Dr. White's second Case.*

“ A woman, aged 50, five years ago struck her face against a swinging scale in a dark pantry. The pain was not of long duration ; but some weeks after the injury, the part became acutely painful, interfering much with her sleep and general health. A hard rugosity was now felt about half an inch from the ala nasi of the right side, or midway between the angle of the mouth and nose. The progress of the ulceration was slow, the scab occasionally falling off ; the edges of the skin being of a violet colour, with a doughy feel. At the time of using your preparation, the disease extended from the spot mentioned to the angle of the eye and nose of the opposited side, and presented the true characters of *lupus* with *hypertrophy*. Her general health good ; but wasted with fretting and nocturnal pain ; countenance pale, sallow, and cadaverous. I prescribed for her twenty minims of the liquor of hydriodate of arsenic and mercury, to be taken three times a day ; with the application of a lotion consisting of equal parts of the liquor and distilled water. She continued

taking her medicine until May 17, when five minims were added to each draught. On the 27th, in consequence of sickness and headach, they were discontinued for a week, and resumed and continued until the 20th of June, when they were discontinued, all traces of the disease having disappeared, nor has it returned. Her general health is much improved, as much from the joy and happiness she experiences at the removal of so unsightly a disease. The rapidity with which the cure was performed is truly surprising. The lotion was applied frequently with a camel-hair brush; the application was followed by a little smarting.

" Ever yours, faithfully,

" JOSEPH D. WHITE."

*Mr. Jones's Case.*

" *Woodbridge, Suffolk,*

" *June 28th, 1841.*

" DEAR SIR,—I have great pleasure in being able to speak very favourably of the action of the liquor of hydriodate of arsenic and mercury. One case of lupus in an early stage came under my notice some time since; conium, and every means that could be suggested to allay the pain, had been tried by two or three medical men, and no relief being obtained, the poor woman was for trying every thing she heard of. I was asked to see her in consultation with her usual attendant. I found the nose covered with a dark, hard scab, having a tuberculated feeling, indeed as if there were some split peas under the skin; it was very hot; and the poor creature was quite desponding. It immediately occurred to me that it was a good case to try your remedy, and most gratifying was the result. I ordered  $\mathfrak{m}\mathfrak{x}$  to be taken night and morning; and a lotion composed of one part of the solution with three parts water. The scab soon came off; the pain subsided; and the nose is now quite well. The scab came off almost in one piece, like the peel off an orange, leaving a healthy, granulating surface underneath. I

have also under my care a case of tuberculated disease of the skin of the whole face.

“Yours faithfully,

“RICHARD JONES.”

*Mr. Jones's second Case.*

“Woodbridge, Sept. 14th, 1841.

“DEAR SIR,—On the 4th of April I was requested to see the case in question, and found the whole of the bridge and *alæ nasi* covered with a dense, horny crust, of a brown colour, having elevations about the size of a pearl-barley, or a little larger, distributed about it; very hot and painful to the touch. The disease had been of several months' standing, and was slowly, but gradually, increasing. Various remedies had been tried; cooling applications; stimulants; sedative poultices; but all to no effect, the disease was increasing. She had consulted a physician in the neighbourhood, who ordered the *conium* poultice; no good, however, resulted; and looking upon the case as one of tubercular disease, I thought it a very good one for trying your solution; and the best results ensued. I directed ten minims to be given night and morning, and a lotion composed of one part solution, with three of distilled water, to be kept constantly applied. In about a fortnight, improvement was very evident; the crust afterwards came off quite whole; healthy granulations appeared, and by the middle of June it was quite healed, and the nose is now looking healthy and natural.

“I am, dear Sir, yours faithfully,

“RICHARD JONES.”

*Dr. Bigger's Cases.*

“25, York-street, April 22, 1842.

“DEAR MR. DONOVAN,—I feel happy in being able to testify to the utility of the liquor hydriod. arsenici et hydrarg. first introduced to the public by you. I have found it useful in

cases which had resisted the medicinal powers of the component elements separately. It was in cases of psoriasis that I have have principally employed it.

"John Gorman, about whom you spoke to me lately, had been afflicted with sycosis in the lower parts of the face, and upper part of the neck; he had been treated by various medical gentlemen without success, and had been twice salivated before applying to me. Mercury having failed, I tried arsenic in the form of Fowler's solution, which he took for a long period without the slightest benefit. I then caused him to poultice his face regularly, and I applied a solution of nitrate of silver every second day to the surface whilst soft from the poultice, giving him at the same time half a drachm of your solution three times a day. There was manifest improvement before this plan had been pursued a fortnight; he was able to shave himself, and became more humanized in appearance. At the end of two months I ceased using the nitrate of silver, and your solution was alone employed. In four months from the commencement of treatment he was quite well. I saw this man yesterday, more than a year and a half since he was pronounced well, and he has had no return of the complaint. I should mention, that during the entire treatment he was exposed to the wintry weather, being a car-driver; this may in some degree have retarded the operation of the medicine, but it did not cause it to produce any bad effects on the patient.

"I feel very grateful to you for your kindness in giving this medicine to many of my poor patients who could not afford to purchase it; and I think the Profession are your debtors for the handsome manner in which you put forward your discovery in the *Dublin Journal of Medical Science*, as such a medicine, if kept secret, would have made the fortune of half a dozen empirics.

"Believe me your's very sincerely,

"S. LENOX L. BIGGER."

*Mr. O'Ferrall's Cases.*

" 35, Rutland-square, May 7th, 1842.

" DEAR SIR,—In reply to your note requesting to know the result of my experience in the use of the hydriodate of arsenic and mercury, I am happy to be able to say, that you are rightly informed as to the favorable action of that medicine in many cases in St. Vincent's Hospital. I am bound, however, to add, that in lupus I have not been able to accomplish a cure independent of local means. In certain forms of cutaneous affections the efficacy of the salt is very obvious, although it *has* happened in several instances that the benefit was exactly coincident with the action of its mercurial element on the mouth. Altogether, I consider it a valuable addition to the *Materia Medica*.

" Your's, very truly,

" J. M. O'FERRALL."

*Dr. Ferguson's Cases.*

" North Frederick-street,

" June 9, 1842.

" DEAR SIR,—Since the conversation we had some months since on the subject of your 'liquor hydriodat. arsenici et hydrag.' but three cases of any importance, to which I deemed it peculiarly applicable, presented themselves to my notice, the results of which it affords me peculiar pleasure to communicate to you.

" Mrs. Dooley, the mother of five children, and nursing one four months old, was admitted in Sir Patrick Dun's Hospital, March 23rd, presenting on different parts of her body, particularly the neck and scalp, well marked specimens of *rupia*. No syphilitic taint was suspected. Her constitution seemed much impaired; the disease showed itself on the fauces and palate; the conjunctiva and palpebræ were much inflamed. After preparatory purgation, this woman was ordered a six ounce mix-

ture, with forty drops of the 'liquor,' to be taken in three doses during the day. This dose was at intervals raised to sixty drops in the day, on the 6th April. On the 19th this dose was reduced one-third, in consequence of the appearance of some symptoms attributable to the arsenic. The reduced dose, however, was well borne until the 27th of April, on which day she left the hospital in greatly improved, indeed excellent general health, without any remains of the eruption, save tender eyelids. The only other remedial agents employed in this case were occasional aperients, collyria, and *one* warm bath.

"Miss —, æt. 35, of strumous diathesis, and subject to menorrhagia; for the past two years has laboured under *lepra*, in a rather aggravated form, the eruption being most excessive at the elbows, forearms, thighs, and legs. Had been for the greater part of that time under the care of two most eminent London practitioners, experiencing occasional relief, never entire removal of the eruption. In two months' use of the liquor, beginning with fifteen drops *ter in die*, and never exceeding twenty, the disease has entirely disappeared, and left an apparently healthy condition of the skin. Her general health is decidedly greatly improved.

Woulfe, æt. 50, an old soldier, admitted into Sir P. Dun's Hospital, May 19th, 1842, covered from head to foot with patches of *lepra*, most copious on the legs and back; of some months' standing. After brisk purgation, I ordered him a ʒvj. mixture with liquoris ʒiss. ʒi. *ter in die*. 23rd May. I raised the dose to ʒij. to the ʒvj. mixture, ʒi. *ter in die*. 27th. ʒiiss. June 1st. ʒiiij. 7th. ʒiiiss. In this case the medicine has never induced a single unpleasant symptom, but been perfectly tolerated. I have superadded occasional purgatives, with the hot bath about six times, and the beneficial effects already produced by it, I must say, have been quite satisfactory to me; the disease most markedly disappearing. This man's general health is greatly improved since his admission into hospital, and I have

little doubt but a very short time will enable me to report his skin *natural*.

“ Believe me, with the greatest respect, &c. yours,

“ J. C. FERGUSON.”

The following cases are abridged from a letter from Dr. Osbrey to Mr. Donovan, published in the *Dublin Journal of Medical Science*, vol. xxi. p. 402.

Susan Atkins, æt. 9, was affected with diffuse psoriasis which engaged almost her entire body, the scales on the extremities being continuous and remarkably thick. During two years she had been under the care of several practitioners in London, but had received no relief. Dr. Osbrey having received her into St. Mary's Dispensary, Dublin, tried various remedies without making any impression on the disease. He then directed ten drops of the liquor hydriodatis arsenici et hydragryri to be taken every third hour. At first the medicine caused slight sickness of the stomach, but it soon ceased to produce this effect on its being discontinued for a few days. Ten days after its commencement the eruption began rapidly to decline on the trunk, and the thick scales to loosen on the extremities. In five weeks, during which she improved in health, her appetite declined, she fell away in flesh, and became pale; but almost all traces of the eruption had disappeared. After some discontinuance she resumed the medicine; and after three weeks' use of it she was completely cured, and was perfectly well in eight months after when Dr. Osbrey accidentally saw her.

“ This case (says Dr. Osbrey) I considered as one of particular interest, from the circumstance of the disease being of so aggravated a nature, of a duration so considerable, and from its having resisted every other remedy which had been used. I tried previously to using the liquor of hydriodate of arsenic and mercury, the iodide of potassium, Fowler's arsenical solution, mercurial alteratives, sarsaparilla, guaiacum, carbonate of soda,

and other remedies, without making the slightest impression on the complaint."

A young woman affected during a few weeks with a diffuse scaly eruption, was put under the same medicine, and in the same doses. In ten days the disease disappeared.

Another woman during twelve months troubled with thick scaly patches on the extremities, used this medicine with equal success. She did not complain of any sickness of the stomach, although she took twenty-five drops three times a day. In three weeks she was well. After six months she had suffered no return.

In a case of button-scurvy, iodide of potassium and mercury failed, as well as other medicines, exhibited by different practitioners. The liquor hydriodatis arsenici et hydrargyri cured the patient in a month, without producing any derangement of health.

Dr. Osbrey relates other cases successfully treated, and also adduces several diseases of the skin, as ephelis, pityriasis, &c. which yielded to the power of this medicine.

It should be particularly remarked, that in the case of Susan Atkins, the patient had used iodine, arsenic, and mercury separately without the least benefit, but the combination of the three cured her.

*Dr. Hamilton's Case.*

*" Birkenhead, May 3rd.*

" DEAR SIR,—I should feel very happy to furnish you with a short abstract of the case I spoke of, but I fear there would be a very great difficulty in ascertaining what were the exact remedies which had been tried beforehand, as the patient belongs to the lower class; suffice it to say, however, that she had been under treatment from various talented professional men for the last eight years, without any apparent benefit, and that under the use of your valuable medicine, during a period of four months (with a few interruptions) she has steadily improved, and has now been much longer free from the disease

than she ever recollects, so much so that I consider the cure both perfect and permanent.

“ I remain, dear Sir, your's sincerely,

“ WM. THOS. HAMILTON.”

*Dr. Graves's Case of Superficial Lupus.*

“ Patrick M'Guire, æt. 60, a servant, of temperate habits and healthy constitution, was admitted into the Meath Hospital, under the care of Doctor Graves, on the 13th of June, 1842, being affected with common itch of long standing; besides a peculiar eruption of the skin, which had continued four years. Although he had been treated several times in various hospitals, he had resisted all the remedies employed, both internal and external, among the rest, hydriodate of potash.

“ This obstinate form of cutaneous disease occurred on four parts of his trunk; it commenced by a sensation of itching and tingling, attended by a few red pimples, which were very slow in their maturation, and did not form matter towards the apex for several weeks. Soon after the accumulated pustules were ripe they burst and scabbed; and then a few others began to appear in their immediate vicinity, which ran the same course; while the ulcers arising from the former slowly healed. The cicatrized surface left was covered by a very smooth epidermis, evidently much thinner and much finer in its texture than natural. The corion corresponding to the disease was mottled; the colouring matter of its external surface having been absorbed in spots, which consequently were morbidly white. There was no puckering in the cicatrization; it felt every where smooth and soft. The most curious character of this eruption, which I called superficial lupus, was the very great slowness with which it spread, so that from the time of its first appearance on a part, it occupied four years before it had extended over a surface the size of a man's hand. At the end of that time, it exhibited no tendency either to proceed more rapidly or become more virulent. Neither, on the other hand, did it manifest the least ap-

pearance of ceasing, but continued its slow, monotonous course, always throwing out five or six new tubercular pustules, to replace those which were in the act of being healed.

"M'Guire's itch soon yielded to sulphuret of potash baths, which had no effect on the lupus; and on the 13th of July, he commenced taking fifteen drops of Mr. Donovan's solution every day. The dose was gradually increased to forty drops, and under its influence improvement soon became evident. No new pustules were formed; and on the 1st of September, when he had taken two ounces and a half of the solution, equivalent to two grains and a half of arsenious acid, each of the four batches of eruption had been healed; the mottled surface is of course permanent. The remedy produced no unpleasant symptoms."

*Dr. Kirby's Cases.*

*Harcourt-street.*

DEAR SIR,—Having prescribed the liquor hydriodatis arsenici et hydrargyri in some cases with advantage, I feel much pleasure in communicating to you the result of my experience. As the use of it was spread over long periods, and nothing particular occurred deserving an entry in my note book, you must not expect to be furnished with minute details. Whatever observations I have to make as to the effect of the solution, I reserve for the conclusion of this brief notice.

Its power to arrest certain forms of uterine disease I conceive to be declared by the following facts. A lady, in whom about six years ago the speculum displayed much patency of the os uteri, with firm and considerable vascular turgescence, and in whom exploration by the rectum discovered enlargement, weight, and hardness of the uterus, left town before I adopted any treatment, and put herself in the care of competent advisers, whose opinions fully coincided with my diagnosis. In June, 1841, she applied for my advice; her health was now truly impaired. The uterine disease had greatly advanced, accompanied by lumbar, pelvic, and inguinal persisting pains, with much

tenderness in the left supra-pubic region, where uterine fulness was perceptible, and a seton was some months previously introduced without any perceptible advantage. I now directed liq. hydriod. arsen. et hyd. which was steadily persevered in for a year, under my guidance, yet with short interruptions suggested by its effects and the arrival of menstrual periodicity. At the expiration of twelve months, I again had an opportunity of full examination. On this occasion I found the cervix uteri much less tumid, the os uteri much contracted, and the size of the uterus considerably diminished. Her general health was so signally improved, that the lady had grown not only unbecomingly, but almost inconveniently, corpulent. In this condition I ordered her to the coast for the purpose of bathing, and I directed the solution to be discontinued,—a command to which she submitted with an avowed hesitation and reluctance, but to which I effectually opposed the promise that she might resume the medicine as soon as she returned to her winter residence.

“In the case of a lady forty years of age, in whom examination *per vaginam* displayed the same state of the os et cervix uteri as in the former one, the rest of the vagina being in a healthy state, the effects of the solution were rapidly and strikingly exhibited. In six weeks the parts resumed a natural condition, at the same time the pelvic, lumbar, and perineal pain disappeared, and the patient wore all the appearance of comparative health, which I am informed she still enjoys, it being now six months since she left my care.

“As these cases appeared to show that the solution acted energetically on the uterine system, I was induced to test its virtue in two cases in which cancer had advanced to a formidable amount. I am of opinion that in both it evinced an anodyne power, as the pains were much alleviated during the continuance of its use. I could not perceive any other effect.

“I feel fully authorized to vouch for the efficacy of the solution in obstinate pityriasis, in psoriasis diffusa of an aggravated form, and in scaly tetter of many years' continuance. Although

the virtues of this remedy were speedily shown in some cases, yet in the greater number they were not perceptible until it was persevered in for some time, when a slowly progressive amendment followed a rigid perseverance in its use.

“The case of pityriasis resisted every variety of both general and local treatment under the care of many practitioners, and yielded only after a six months' course. The psoriasis required a longer period, and in some of the cases of scaly tetter the medicine was not laid aside for a year.

“I have seldom been able to continue the doses marked in your original communication. The medicine is one of unquestionably accumulative tendency, and when it acts with collective power it affects the gums, confines the bowels, deranges the stomach, and produces headach, uncomfortable giddiness, and confusion of mind. These unpleasant effects are relieved by purging, but do not disappear even by that treatment and suspension of the remedy for a period varying from ten days to three weeks. On resuming the solution, I have found it necessary to make a considerable reduction of the dose, for few have been able to bear the original quantity. On such occasions I prescribe it in minims from eight to twenty, a number quite sufficient to secure its curative efficacy. Even these cautious doses I have been sometimes obliged to discontinue, in consequence of the specific symptoms already noticed.

“The salutary action of the medicine seems to me to be much promoted by a moderate diet, and a steady avoidance of all stimulant fluids, and by an occasional tepid bath. As far as my experience allows me to speak, I do not think I have observed any injurious consequences to remain even in those cases in which the remedy was continued for several months without any interruption.

“Your's, dear Sir, very truly,

“J. KIRBY.”

*Mr. Gabriel Stokes's Cases.*

*" Mullingar, Sept. 29th.*

" DEAR SIR,—Understanding that you are writing on the therapeutic effects of liquor of hydriodate of arsenic and mercury, I wish to state to you, that I have treated, within the last two months, five cases of obstinate psoriasis most successfully with that remedy; three of these cases were boys about the age of from twelve to thirteen, inmates of Wilson's Hospital, in this county. The disease had been contracted by sleeping with infected persons, was in all from two to three years' standing, and had resisted a variety of treatment. About six weeks since, these boys were put upon five drops of your solution three times a day, which has since been increased to ten; they may be all now considered as nearly cured, nothing remaining but a slight staining of the skin. Since the adoption of this treatment no other remedy has been used, and it has in no instance produced the slightest derangement of the alimentary canal; the other two cases were in adults, and of many years' standing, one is now quite cured, and the other rapidly progressing to recovery.

" Believe me, dear Sir,

" Your's very truly,

" GABRIEL STOKES."

*Dr. Croker's second Case,*

*" Merrion-square, Sept. 29.*

" DEAR SIR,—The case to which I lately alluded was this: A woman, aged 68, was admitted into Dr. Steevens's Hospital, under my care, labouring under a severe form of psoriasis, which affected the face, backs of the hands and fingers. The eruption had made its appearance a fortnight before her admission; and was attended with much irritation and itching. She commenced taking dilute sulphuric acid, and continued it for some time without any visible improvement. On the 20th of August, she was ordered 15 minims of the liquor of hydriodate of arsenic and mercury, and after persevering in it for some

time, the dose was increased to 25 minims, beyond which it could not be exhibited without sickening her. On the 20th of Sept. she was discharged quite free from the least appearance of eruption, with the exception of a small spot on the back of the right hand. At the time of her discharge, her general health was excellent; and she appeared stouter than on admission.

“Your's dear Sir, very truly,  
“C. P. CROKER.”

*Sir Henry Marsh's third Case, reported by Dr. Burton.*

A girl of strumous appearance, aged 5, affected with tinea of the scalp, and some patches on the neck and shoulders, had been treated with various remedies, during several months, but unsuccessfully. The liquor of hydriodate of arsenic and mercury was prescribed for her by Sir Henry Marsh, in doses of two minims twice a day; and externally, diluted with seven parts of water, as a lotion. This treatment was pursued with occasional interruptions for about three months, during which, two drachms of the liquor were taken, equal to  $\frac{1}{4}$  grain of arsenic. The result was a perfect removal of the eruption; the child's health was much improved, and she appeared to have acquired considerable increase of flesh. She has continued free from any eruptive disease up to the present date.

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CONCLUDING OBSERVATIONS.

The foregoing cases have been selected from many in which cures were effected without any peculiarity worthy of observation; and it is by no means to be understood, that the experience of the practitioners who have obligingly furnished them, has been confined to that number.

In concluding, I may be permitted to make a few general observations on the preceding cases. It may be collected that the elements, of which the liquor of hydriodate of arsenic and mercury is composed, do really acquire an increase of efficacy by combination; for we find, that diseases in which arsenic, mer-

cury, and iodine had been separately tried without any good effect, were finally cured by the same agents when they were in a state of chemical union. Amongst the changes of properties induced on these substances by chemical affinity, an increase of medical efficacy seems to be one.

Thus, in Professor Williams's case, Fowler's arsenical liquor had been given for a fortnight without the least effect; and hydriodate of potash had no better success. But after one week's use of liquor of hydriodate of arsenic and mercury, in very small doses, the lepra began to yield, and soon after disappeared.

In Dr. Osbrey's case of psoriasis, the patient had been for two years under trial of various remedies without relief. When placed under Dr. Osbrey's care, Fowler's solution, mercury, hydriodate of potash, sarsaparilla, guaiacum, and soda, were used without making the slightest impression. Within ten days after the patient commenced taking the liquor of hydriodate of arsenic and mercury, the eruption began to decline rapidly; and in two months, the woman was perfectly well.

In Dr. Charles O'Reilly's cases, Fowler's arsenical solution, iodine, calomel, corrosive sublimate, sarsaparilla, and the whole tribe of alteratives had been ineffectually employed; yet the liquor of hydriodate of arsenic and mercury succeeded; in one instance three drachms were sufficient, equal to three-eighths of a grain of arsenious acid; in the other four drachms.

Dr. Bigger's patient had used mercury largely, as also Fowler's solution, without the slightest benefit; but under the use of the liquor he speedily got well. Dr. Irvine frequently failed with iodine, arsenic, and mercury, separately employed, but with the combination he succeeded.

- There is abundant evidence that this medicine succeeds in the worst forms of disease, and sometimes in a very short period, when all the usual modes of cure had failed. Dr. Ferguson's patient had been for nearly two years under treatment, but unsuccessfully; yet in two months, the liquor of hydriodate of arsenic and mercury succeeded, when no more than two and a half grains of arsenious acid had been administered. Dr. Ha-

milton's patient had been under treatment for eight years, without any apparent benefit; but when put on the use of the liquor, she recovered in a few months. Dr. White's patient, for years under the use of various remedies for an excruciating psoriasis, was cured by the liquor in seven weeks. On Mr. Jones's case nearly the same observation may be made. Dr. Hickson's patient had laboured under a disease for ten years which was cured in less than three weeks by the liquor. Dr. Graves's patient suffered from what he denominates superficial lupus, for four years, and had been treated in various hospitals with the usual remedies, both internal and external, and with sulphur baths; but all failed. The liquor of hydriodate of arsenic and mercury cured him within seven weeks, when he had taken but two and a half grains of arsenious acid. Dr. Kirby's case of pityriasis had been treated by various practitioners, and resisted every variety of treatment, general and local; after six months' perseverance in the use of the liquor, the disease gave way. The child treated by Sir Henry Marsh for tinea capitis had resisted various remedies during several months, but recovered perfectly under a three months' course of the liquor used internally and externally. Some of Mr. Stokes's patients had also resisted various modes of treatment.

The power of this medicine over lupus is evinced by the cases of Mr. Carmichael, Mr. O'Ferrall, Mr. Jones, and Dr. White. In Mr. O'Ferrall's case, local means were also necessary. Dr. White found the liquor itself adequate as a local application.

That the external application of this medicine, in the form of lotion, is useful, there is sufficient evidence; and this is a property of importance to those whose irritability of stomach and bowels will not permit its internal exhibition. The case of Dr. Croker clearly proves its power as an external agent. The same seems to be evinced by Sir Henry Marsh's second case, in which perseverance in small doses during thirty-nine days did no service, although when the internal use of it was assisted by the

external application, the patient speedily began to get well. Mr. Jones's and Dr. Hickson's cases seem also to have received benefit from the local application. I have known several instances in which the external use of the liquor alone was successful, but they were slight affections.

From the various statements it appears, that slight ptyalism sometimes supervenes on the use of the liquor of hydriodate of arsenic and mercury. This might be expected, inasmuch as each of the three elements of which it is composed, is separately capable of producing this result. Arsenic is not so generally known to possess this power; but that it does was proved by Girtanner of Gottingen, who exhibited arsenious acid largely in syphilis. More lately the fact has been again observed. That iodine possesses the same power is now almost as well known as that mercury does. I have observed, however, that when the liquor of hydriodate of arsenic and mercury produces ptyalism, it does so with less previous soreness of the gums, than any other mercurial preparation, and often with none.

Mr. O'Ferrall found the effects of this medicine to be coincident with its mercurial action on the gums. Mr. Cusack observed the mouth to become tender in two instances only. And more generally a cure has been effected without soreness of the gums, or ptyalism, as appears by the silence on this symptom, of those practitioners who have furnished the preceding reports.

The dose has been variously represented. Dr. Kirby is disinclined to doses exceeding 20 minims, and this quantity he conceives sufficient to secure its curative effects. Sir Henry Marsh, in the case of a boy, twelve years old, began with 15 minims twice a day; and gradually pushed it to half a drachm; and at length the patient got half an ounce in divided doses during twenty-four hours, which only produced "very mild insalivation." In venereal eruptions, Mr. Cusack found one or two scruples three times a day sufficient; but even when larger doses were given, he did not observe any unpleasant consequences. Dr. Irvine's patient took 3ss. three times a day, for seventy-

six days, and was only twice obliged to discontinue it for two or three days, owing to headach and sickness of the stomach. Dr. Graves's patient, a woman 60 years old, took 3ss. four times a day, for two months, with only two interruptions owing to disagreement. These instances show how differently the medicine can be endured by different constitutions. It is certainly prudent to begin with Dr. Kirby's doses ; but after a while, as in the case of tartar emetic, a state of tolerance is induced, and then the medicine may be gradually increased at discretion.

The smallness of the quantity of arsenic and of the other elements, that sometimes effects a cure is striking, and affords an additional proof of the energy which they acquire by combining chemically. In one of Dr. O'Reilly's cases, three drachms of the liquor were successful, containing  $\frac{3}{4}$  grain of arsenious acid,  $\frac{3}{4}$  grain of peroxide of mercury, and about  $2\frac{1}{2}$  grains of acidified iodine ; in another,  $\frac{1}{2}$  more of these elements was required. One of Dr. Ferguson's patients was cured by  $2\frac{1}{2}$  grains of arsenious acid. Dr. Osbrey succeeded with about a grain of arsenious acid, Dr. Graves with  $2\frac{1}{2}$  grains, and Sir Henry Marsh in an obstinate case of tinea capitis with  $\frac{1}{4}$  grain. Cases, however, occasionally prove of a very obstinate and tedious nature ; and, generally speaking, skin diseases offer lengthened resistance to curative measures ; thus Dr. Irvine's patient was under treatment 76 days, and required seven ounces of the liquor, equivalent to seven grains of arsenious acid ; Dr. Graves's patient, of 60 years old, required  $10\frac{1}{2}$  grains ; Sir Henry Marsh's, a child of 12 years, required a far greater quantity ; some of Dr. Kirby's patients were a year under cure ; and I know a lady, who being troubled with psoriasis almost all her life, is now after a year's treatment only beginning to improve.

The diseases in which practitioners have hitherto found the liquor of hydriodate of arsenic and mercury to be useful, as appears by the foregoing testimonies, are the various forms of psoriasis, impetigo, porrigo, lepra, venereal eruptions, both papular and scaly, pityriasis, sycosis, ephelis, lupus, sibbens, and some uterine diseases.

Those who have continued to take this medicine during a long period, often lose flesh ; but this is by no means a constant effect. In Dr. Croker's second case, the condition of the patient was much improved ; and the lady mentioned by Dr. Kirby had become inconveniently corpulent. Dr. White's first patient was left "in excellent health and spirits," and his second was "much improved in general health." Dr. Ferguson reports his first case as having "left the hospital in greatly improved, indeed excellent health," and his second as "improved" in general health. In Sir H. Marsh's third case the girl's "health was much improved, and she appeared to have acquired considerable increase of flesh."

Sometimes the liquor occasions disturbance of the stomach and bowels. This occurs during the first two or three days of its exhibition ; and also when by continuance of its use its effects are accumulated ; and then it often affects the head. But these disagreeable results are far from being constant ; in none of Mr. Stokes's many cases was there "the slightest derangement of the alimentary canal;" and the same is observable in Dr. Graves's, and several other of the foregoing reports. Future experience will, perhaps, show, that long continued treatment with small doses answers better than urging with large ones ; the beneficial effects of arsenic are rarely in a direct ratio to the magnitude of the dose.

We have evidence that this medicine may be administered to patients of almost all ages. Thus one of Sir Henry Marsh's patients was but five years old, while both of Dr. Graves's had attained their sixtieth year, and Dr. Croker's her sixty-eighth.

It cannot be too much impressed on prescribers of this medicine, that they incur great risk of destroying its powers by mixing it with other articles intended to modify its effects. It ought not to be conjoined with opium, nor with acetate, muriate, or sulphate of morphia. When opiates are necessary they should not be administered at the same time with the arsenico-mercurial liquor. In general the best mode of exhibition is simply to pre-

scribe it with *distilled* water. And I take this opportunity of once more suggesting to the Profession, that the doses of this medicine should be ascertained by the minim measure, and not by the very variable standard of drops, no two of which are alike.

My objects, in publishing this memoir, have been to prove, that the liquor of hydriodate of arsenic and mercury is, in constitution, what I originally represented it to be—a true chemical compound; to show that the process, which I gave for its preparation, is adequate; to collect in one view a statement of its medicinal effects, as ascertained by the practitioners who have employed it; to draw attention to its agency on different constitutions; and to make known the precautions which have been found necessary in its administration. I imagine that the extent of its control over various diseases, is far from being ascertained; and I venture to express a hope, that practitioners will make further researches on this subject.

In bringing this remedy before the profession, I have done nothing more than to combine three energetic agents, the qualities of which were already well known; and thus to form a *tertium quid*, possessed of new and increased powers, in a form convenient for exhibition, of unvarying strength, and unchangeable nature. I have done my best in giving ample and accurate directions for its preparation; yet I frequently receive letters from persons anxious to be put in possession of tests for discovering when it has been rightly prepared; some declaring that they have had it colourless, and others complaining of its being brown. I can only say, once for all, that the instructions contained in my former memoir, and in this, if rigidly complied with, will never fail; that a very small amount of negligence will partially defeat the intention; that a rigid analysis is the only mode of discovering when the proper quantities of the elements are present, that the colour of the liquor ought to be pale yellow, and its s. g. 1.02; but above all, that the whole of

the solid materials to the  $\frac{1}{38}$ th part, or less, should be held in solution in the liquor.

This medicine is now used on the Continent, and in the United States. That its employment is rapidly extending is shown by the fact, that within the last two years and a half, about 300 pints of it have been sent out of my establishment alone, which is a vast quantity of an article prescribed in minim doses.

I shall feel obliged for such further communications as practitioners may choose to favour me with. It is by the plan of publishing such documents, that the real powers of this useful medicine will be ultimately developed and determined.

11, *Clare-street, Dublin.*

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ART. VII.—*On Chronic Inflammation of the Uterine Appendages, occurring after Parturition.* By RICHARD DOHERTY, M. D., Honorary Member and Secretary of the Dublin Obstetrical Society, &c.

[Read before that Society, 5th May, 1842.]

THE disease, I propose to myself the honour of bringing under your notice this evening, is one, which, in my opinion, has not received from obstetrical writers the distinct consideration it deserves; although from the obscurity of its early symptoms, the insidiousness of its progress, and the organic changes to which it may give rise, it behoves the midwifery practitioner to make himself well acquainted with its characteristics.

It is a fact universally recognized, that after parturition the uterus and its appendages are liable to inflammations of an acute and dangerous character. The symptoms of hysteritis, as it presents itself after delivery, are too obvious in the generality of cases to escape notice, and it is of course well known to every one, whom I have the pleasure of addressing, that the diseased action frequently extends to the ligamentous tissues and the ovaries. Thus if we see a patient, shortly after labour, seized with febrile symptoms, and complaining of pain in the hypogas-

trium, where the uterus feels hard and tender to the touch, our suspicion is immediately excited, that some deviation from its natural condition has occurred. If tumefaction and tenderness at the same time manifest themselves in either iliac fossa, it is not difficult to surmise, that the ovary has also partaken of the morbid alteration; and if, in addition, the peritoneum become inflamed, we can readily believe the ligaments of the womb have not escaped unaffected, although it may be impossible to point out any indications which exclusively belong to the latter complication. With the well-marked symptoms which characterize these conditions, and the consequences they entail, if permitted to proceed unchecked, we are perfectly conversant. But the affection, to which I would now beg to direct attention, is not of this prominent character. It is, on the contrary, stealthy in its nature, and usually makes its approaches so gradually, that for a long time the existence of any local malady may be unknown to the patient herself, who thus permits it to remain untreated week after week, until it has, perhaps, laid the foundation of organic changes, which it may be ultimately out of our power to remove. To this disease I have heard Dr. Kennedy, to whom I am indebted for my knowledge of it (for I have in vain sought in books its accurate delineation), give the name of *secondary* inflammation, by which he meant to imply the usually late period of its occurrence, and not that it must necessarily be preceded by a more acute, or other morbid process. It is not my intention to deny that the local changes which I am about to detail, may result from, or be, as it were, the remnant of a more intense degree of inflammation; but the fact I wish to demonstrate is, that the appendages of the uterus are liable to become the seat of an inflammation, but feebly announced by symptoms *from the very first*, and occurring *after* the period, during which the parturient female is usually considered obnoxious to such attacks.

The history of these cases is generally as follows. The patient has probably had an easy labour, and her progress been so favourable, we have ceased our attendance, or if an hospital pa-

tient, she has been dismissed on the usual day, free from complaint. Convalescence proceeds uninterruptedly for some days, or even weeks ; but after exposure to cold, or some local source of irritation, she is seized with shivering, succeeded by hot skin and quick pulse, and a dull weight about the pelvis. After a few hours the feverishness disappears, and although some uneasiness still remains about the lower part of the abdomen, it is not sufficient to excite any apprehension in her mind ; and thus a considerable space of time may pass over. Febrile paroxysms however, recur at intervals, and at length becoming more frequent, and stiffness and pain being felt in moving the leg of the affected side, she again applies to us for advice.

We then find her pulse permanently accelerated, but soft, generally about 100 in the minute ; her tongue foul ; she complains of frequent rigors, returning, perhaps, at the same time every day ; she states, that when rising in the morning she is bathed in perspiration, that her health is declining, and she is unable to move one or both legs without pain and difficulty. She probably complains at the same time of a frequent desire to make water, and sometimes a tendency to diarrhoea. Such are the symptoms which will be detailed to us by an intelligent patient, but it should be remembered, the affection I speak of may exist for a long time, producing but little inconvenience, so that from many persons labouring under the malady, I have been unable to extract any history of its approach. When closely questioned, however, she points to one (more seldom to both) iliac fossa, as a source of uneasiness, and placing our hand there, we perceive an unnatural fulness, sensitive to pressure. On making a more accurate examination we are surprised to find the whole of the iliac region, particularly towards Poupart's ligament, of a brawny hardness, with or without a prominent and more defined swelling, rather higher up, which, when it exists, is very tender to the touch. The question then arises, what is the nature of the disease we have here to treat ?

There may be noticed, in the first place, an error, into which

the medical attendant may be led, by proceeding hastily in his investigation. If the hand be placed hurriedly on the abdomen, and more particularly pressure made on it by the points of the fingers, the region, submitted to such contact may appear to the touch hard and unyielding; although the resistance felt depends only on contraction of the abdominal muscles, which, in women of a nervous temperament, are very readily thrown into strong, and indeed involuntary action, during the agitation caused by our presence; and it is astonishing the force, with which pressure is repulsed under such circumstances. In making the examination, therefore, tact is requisite in more senses than one; for not only is it necessary to be aware of the proper mode of manipulation, but we must also by our manner and words allay the apprehensions of our patient. While she lies on her back with her knees drawn up, she should be encouraged to permit us to make pressure (which should always be done with the *palm* of the hand), without puffing out her abdomen, or exerting herself, either by her respiration or in any other way, against us. In excitable females it is requisite to keep the hand in contact with the abdomen for two or three minutes, before we lean any weight upon it, until the parietes have become accustomed to its presence, and the spasmodic action of the muscular structure has subsided. Then the palm may be pressed gently downwards, and rolled backwards and forwards, until the existence or absence of any deep-seated tumour has been ascertained. I am induced to dwell upon these apparently simple precautions, from having frequently seen inattention to them cause the patient a great deal of unnecessary pain, and lead to the formation of an incorrect diagnosis.

If we have thus convinced ourselves of the presence of some unnatural tumefaction, we have next to determine its exact seat and nature. A simple process is alone necessary to enable us to decide whether it is situated in the abdominal wall (premonitory of abscess), or in the structures more deeply placed. By directing the patient to lean on her hands and knees, if the tumour

be within the belly, not only the skin but the whole thickness of muscular tissue can be freely moved over it, and will evidently appear unconnected with it. If then, it be the right iliac fossa that is engaged, we have next to determine, whether it may not depend on some of those affections, to which the cæcum and the cellular membrane in its vicinity are liable. For this purpose the history of the case must be inquired into. If there be an accumulation of fæces in the caput coli,—a condition, which, though simple in its nature, we should remember may give rise in females to considerable constitutional disturbance,—we shall find, the bowels have not for some time past been satisfactorily emptied, colicky pains are felt through the abdomen, attended probably with vomiting, and the whole belly is full and tender, though more particularly so in the iliac fossa. The sudden relief, too, obtained on the expulsion of flatus, and the effect of a large turpentine enema in diminishing the tumour, will aid us in the diagnosis. If inflammation have occurred in the cellular tissue, external to this intestine, an affection, to which the term typhlo-enterite has been applied, we shall find the history in this case also point to disturbance of the abdominal functions, as an early feature in the complaint. The constitutional symptoms, instead of a hectic type, present more the characters of low fever, and are much more urgent; and on applying the fingers to the tumour, we are sensible of a crackling sensation, arising apparently from the displacement of air beneath them. There is yet another disease, with which it may possibly be confounded, namely, an abscess forming behind the iliac and psoas muscles. But here the patient will be much more careful to keep the limb flexed on the pelvis, and if the inflammation be at all active any attempt to extend it will produce intense pain; the standing posture can scarcely be endured, and striking the foot against an obstacle gives rise to a great increase of suffering. The pain, too, is often referred to the knee, and in the whole of its symptoms it in many cases closely resembles disease of the hip joint. In the chronic inflammation of the uterine appendages,

on the contrary, although there is at least equal tension and hardness, and the patient lies with her leg drawn up, she is comparatively indifferent to her posture, and will readily extend her limb at our request. The period, too, being subsequent to labour or miscarriage will help us in drawing the distinction.

But the evidences, which most clearly distinguish this latter affection from all those I have enumerated, are obtainable by making an examination by the vagina and rectum. On introducing the finger into the former cavity, we find the hardness, so remarkable in the iliac fossa, has extended to the roof of the vagina, which is tender to the touch, and *as firm and inelastic as a deal board*; a condition, which must immediately arrest our attention. Not the slightest impression can be made on it by our pressure, while we may also observe, that the uterus is bound down to the affected side, either throughout its whole extent, by which it suffers a lateral displacement, or only partially, so that the fundus is drawn in one direction, while the os tincae is turned in the opposite. Here then is evidence, it is the ligamentous attachments of the womb which have become infiltrated and thickened; and beyond this the morbid changes may not have gone. But if the disease have existed for any length of time, the ovary will probably have become implicated, which will be evinced by more acute symptoms, and more severe pain, and by a prominent and defined tumour, continuous with, and above the deep-seated thickening, which along Poupert's ligament is gradually lost in the surrounding parts. This fact may be still more accurately ascertained by passing the finger up the rectum, when the swollen and generally painful tumefaction, produced by it, is easily felt. This latter mode of examination is absolutely necessary to enable us to form a correct estimate of the extent of the disease. In this way the tumour may be grasped between the finger in the rectum, and the hand externally, and its situation thus correctly determined. The leg of the affected side may also become implicated in the disease.

The occasional pains, which shoot down in the course of the nerves increase into a general neuralgic tenderness of the whole limb, tumefaction commences about its upper portion, and ultimately all the symptoms of phlegmasia dolens are established. This affection would in such cases, I conceive, be admitted to depend, primarily at least, on disturbance in the absorbent system, rather than on inflammation of the veins. I may remark, that it is not confined to the puerperal state, as is commonly supposed, for I have seen it owe its origin to malignant disease of the ovary.

The chronic inflammation of the uterine appendages, I have thus endeavoured to describe, may, as I have stated, be the result of an imperfectly cured acute attack, announced by urgent symptoms within a short period after labour; or as in the cases more particularly alluded to at present, it may make its obscure approach in patients convalescent from abortion, or parturition at the full term, several days or even weeks subsequently. In the latter form I think the general period is about the twelfth or fourteenth day, but I have seen instances, whose history indicated it to have commenced so late as the eighth week after delivery. I could bring forward several cases, which presented the characters I have detailed, but it may, perhaps, suffice to transcribe one, rendered still more interesting by presenting the curious feature of a sudden and exceedingly painful enlargement of the ovary, evidently of inflammatory origin; and I would observe, that the occasional supervention of similar attacks of an acute character is frequently met with during the progress of such cases.

Margaret Graham, æt. 26, the mother of one child, which had been born in the Dublin Lying-in Hospital a month previously, was re-admitted on the 12th December, 1838 (during Dr. Kennedy's mastership), into the ward in that Institution appropriated to diseases of females. Her labour had been natural, and she had been discharged well on the ninth day. Four or five days after she had left the hospital, sickness of stomach and diarrhoea set in, and slight pains occurred in the lower part of

the abdomen. Within the last six days before re-admission she had occasional rigors, and the pain in the abdomen, particularly towards the right side, had considerably increased. She felt, too, great stiffness and pain when she attempted to walk, or even straighten her leg; pulse was 100 and soft; she slept generally till 4 o'clock in the morning, when she awoke bathed in perspiration; she had no difficulty in making water; her bowels had not been freed for the last two days. On examination great hardness and general tumefaction were detected in the right iliac region; the roof of the vagina, as ascertained by the touch, was exceedingly resistant, and the uterus firmly bound down, so that the fundus was turned towards the right side, while the os was directed towards the left sacro-iliac synchondrosis. The plan of treatment adopted consisted in leeching, blistering, and the exhibition of Plummer's pill, and under it the iliac region became softer, and the vaginal roof seemed inclined to relax. Hydriodate of potash was then given, and iodine ointment applied internally to the roof of the vagina, while counter-irritation was maintained without. Her recovery was interrupted by her leaving the house for a few days, and shortly after her return, that is to say, on the 10th February, she had shivering during the night; next day her pulse was quick; there was considerable tenderness and tumefaction in the right iliac region, and the inability to stretch the leg was increased. During the night of the 12th the pain in the right iliac fossa became exceedingly severe, so as to make her seize hold of the bed post; and on the subsequent morning the tumour was found to have greatly increased both in size and tenderness. It formed a swelling equal in dimensions to a foetal head; it was regular on its surface, tense, but elastic. By means of an examination per rectum, it was ascertained to consist of the inflamed ovary. A dozen and half of leeches were immediately applied, and she was immersed in a warm bath; pills of Plummer's pill, James's powder, and opium given; on the morning of the 16th the tumefaction had considerably abated, and the report on the 18th was, "tumour

can barely be detected; no solid lumps came away, nor was there any reason to believe it to have depended on a fæcal collection; the pulse is quite quiet." From this period absorption appeared to proceed much more rapidly than before, and on the 10th of March she was dismissed with the pelvic tissues restored to their natural condition.

In the foregoing example, notwithstanding the sudden and amazing enlargement of the ovary, perfect recovery followed the treatment adopted, and no local disorganization resulted; and this is generally the case when seen before any of the ill consequences I am about to relate has ensued. But in other instances, where the progress of the disease is uncontrolled, changes are wrought in the organs affected, or the adjacent structures, which give rise to symptoms of an immediately alarming nature, or lay the foundation for future mischief. Thus abscesses may form in the broad ligaments or ovaries, and escape either into the cavity of the abdomen, through the vaginal walls, or through the abdominal parietes, near Poupart's ligament; or the irritation may even extend to the serous covering of the intestines, and establish a general peritonitis. But these consequences are much more liable to follow the acute form of the disease; indeed it is surprising how long the results of chronic inflammation may remain effused into the uterine appendages, without running into any of the more serious consequences of inflammation. Secondly, the fallopian tube may be rendered impervious, or its fimbriated extremity glued to an adjacent structure (conditions, which will necessarily be followed by sterility of the generative organs of that side); or if the calibre of the tube be only diminished, an ovum may at a subsequent time be arrested in its passage, and extra-uterine pregnancy produced. Thirdly, we have to fear, that the ovary, stimulated into activity by the disease, may remain, notwithstanding all our treatment, chronically enlarged, and thus be subject to various displacements, or take on a still more morbid process, and become the seat of malignant disease. And fourthly, from the unnatural position in

which the uterus is detained, future impregnation may be rendered impossible, or if conception do take place, the womb being firmly bound down and unable to expand, casts off the ovum prematurely, and thus a succession of abortions may ensue; a fact to which particular attention has been drawn by Madam Boivin.\*

With respect to prognosis, I think it may be favourable; at least, I never saw a case, amongst many, which came under my notice, resist the treatment I am about to detail, if seen before any of the ill consequences mentioned had arisen. But their duration is very uncertain. Some yield speedily to our remedies, while others require several weeks for their cure. The treatment to be adopted should combine local depletion, counter-irritation, and the use of mild mercurials. If the pain be severe, or the roof of the vagina exceedingly hard and tender, great benefit will be derived from the free application of leeches internally, by means of the speculum, and from the use of cupping glasses externally; which measures should be resorted to, as often as a more acute attack interrupts the favourable progress of our case. We may then either cover the whole iliac region with one large blister, or what is better, apply a succession of smaller vesicatories; for we should remember, our principal reliance must be placed on counter-irritation maintained till the tissues regain their natural state. To aid in this favourable change we should resort to mercury in alterative doses, for instance small quantities of blue pill or Plummer's pill, which may be combined with hyoscyamus to allay the irritability that mostly prevails. After the mouth has been touched, we may commence with the hydriodate of potash, while we apply over the region of the tumour either its ointment, or that of the ioduret of lead. Under this management we shall at length observe the tumefaction subside, and the pliancy of the vaginal roof return. According as this restoration is accom-

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\* Recherches sur une des Causes de l'Avortement. Paris, 1828.

plished the uterus may be perceived to rise, until it gradually resumes its natural position ; and thus, all the structures, as far, at least, as can be ascertained during life, will have regained their normal condition. If in the progress of the disease, phlegmasia dolens shall have set in, of course, it will be necessary to combine with the foregoing treatment, those remedial measures which are in ordinary use in this complication.

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ART. VIII.—*A Case of Femoral Aneurism, cured by Ligation of the external Iliac Artery (with a Plate).* By JOHN HOUSTON, M. D., M. R. I. A., Surgeon to the City of Dublin Hospital, Lecturer on Surgery at the School of Medicine, Park-street, &c., &c.

I AM indebted to my friend, Doctor George B. Russell, late Resident Surgeon of the City of Dublin Hospital, for the notes of the following case. A report of it was made to the Surgical Society of Ireland at the time of its occurrence ; but I have waited for some finality in the result, before giving it publicity in an authentic form.

Alexander Byrne, ætat. 26, admitted June 16th, 1840. By occupation he is a car-driver, and acknowledges to have been of intemperate habits, up to so late a period as four months back, when he became a member of the Temperance Society. He is a muscular, well-built man of middle stature, weather-beaten, and looking ten years older than he reports himself. He states that a year ago he observed a lump on the anterior and inner part of the left thigh. At that time it was about the size of a walnut, "beating" as strongly as at the time of applying for advice. He has suffered very little from it, until within the last three or four months, when the anterior part of the leg felt numb, and both thigh and leg became subject to an aching pain, which was aggravated by his ordinary work, or by standing or lying on the affected limb ; latterly, his leg has become somewhat swollen.

*State on Admission*—A little above the middle of the left thigh, on its anterior and inner aspect, over the track of the femoral vessels, there is a large pulsating tumour, elevated about an inch over the natural outline of the limb, and forming a portion of a sphere four or five inches in diameter. The integuments are of the natural colour, and visibly heaved up at every pulsation of the heart. On laying the hand upon the tumour, one is struck by its elasticity, and by its expansion at every point and in every direction, in consonance with the beats of the heart. On the surface of the affected limb, and at the lower part of the corresponding side of the abdomen, several dilated veins may be traced. Pressure in the iliac artery arrests completely the pulsation of the tumour. A loud *bruit* is heard in the aneurism, and in the course of the femoral artery, above and below the tumour, but farther, in the direction upwards than in that downwards.

The respiratory and cardiac sounds are all quite natural. The pulse at the wrist is about 70, full, and regular. At the left side of the umbilicus a strong pulsation is to be felt; but no tumour or other aneurismal symptom presents itself. The general health of the patient is excellent, and he has never suffered from any ailments indicative of farther disease of the vascular system. He has never been subjected to a course of mercury for venereal or other disease. He can assign no cause for the tumour, except a bruise which he received, two years ago, on the front of the thigh, from the step of a passing car.

On the 23rd of June, a consultation was held, at which all my colleagues in the hospital, together with Mr. Colles, Mr. Cusack, Mr. Kerin, and others were present, and at which it was agreed that the operation of tying the external iliac artery should be undertaken.

The operation was performed somewhat after the manner recommended by Sir A. Cooper. An incision was first made in the integuments, three inches long, above, and nearly parallel to, Poupart's ligament—one extremity of it being on a level with

the anterior superior spine of the ilium, the other, opposite the external abdominal ring. The superficial fascia was then divided in the same line, so as to expose the tendon of the external oblique muscle. A small artery which spouted blood in this step of the operation, was secured by ligature. A puncture being now made in the tendon of the external oblique, a little below the external abdominal ring, and a director passed under it from this point, the tendon was divided nearly in the direction of its fibres, and to the same extent as the other incisions, leaving the external abdominal ring uninjured—a precaution adopted with the view of preserving unimpaired, as far as possible, the strength of the abdominal parietes. On separating the margins of the incision thus made in the tendon, and introducing the finger between them, the internal abdominal ring and, deeper still, the pulsations of the iliac artery, could be felt. With these two points as guides, the remaining steps of the operation became obvious and easy. A circumstance occurred in this stage deserving of notice, as one which may be always expected and felt more in the operation as recommended by Sir A. Cooper, than in that of Mr. Abernethy,—namely, a tendency to forcible closure of the wound in the tendon of the external oblique muscle with every, the most trifling, exertion of the body. In this instance, it happened that the individual was particularly impatient, crying, and twisting his body at every touch of the hand or instruments; and with every such movement the divided edges of the tendon were not only forcibly closed together, but even drawn under the lips of the superficial wound, so as to be completely for the moment out of sight; so marked, indeed, were these effects of the struggles of the patient on the form and relation of the wounds, as to impress the by-standers with the conviction, that incisions made in this manner, although they may not be those most favourable for getting at the artery in question, yet must be, nevertheless, those calculated to attain that object at the least hazard of subsequent weakness to the parietes at this part; as all muscular efforts of the individual, instead of

opening up such wounds, must tend rather to keep them, during their progress to healing, in appropriate and steady apposition. The next step consisted in detaching, by means of a director and bistoury, the lower margins of the internal oblique and transversalis muscles from their origins, so as to lay open the inguinal canal. The spermatic cord, which was thus brought into view, was then pulled upwards, and the slender fascia (*propria*), which binds it to the margin of the internal ring, divided at the lower part. By this simple act, the fascia transversalis, of which this slender fascia is a prolongation, was necessarily opened, and the outer surface of the bag of the peritoneum exposed, exactly over the part of the artery aimed at for the application of the ligature. It could now be ascertained by the finger that the only remaining obstacle to the pushing up of the peritoneum to the requisite extent was that portion of the fascia transversalis constituting the outer boundary of the internal ring; and, in the division of this, on a director, neither risk nor difficulty was encountered. The opening thus made was sufficient to afford a full view of the artery and vein; and, had the patient lain quiet, the ligature might have been passed with much ease; but he deported himself far otherwise, rolling on his side, and by his strainings closing together the edges of the wound whenever the finger touched them; retractors were found useless in attempting to keep the wounds asunder. In this dilemma, I was much assisted by Mr. Cusack, who, pushing the fingers of both his hands deeply into the wound, held it forcibly open, and kept the bowél out of the way, whilst, by the feel, and without seeing the vessels at all, I succeeded in separating the artery and vein with my fingers, and passing the aneurism needle and ligature round the former, introducing it for convenience sake, although contrary to rule, from without inwards, viz., bringing out the point between the artery and vein. So much being accomplished, the patient became comparatively quiet, giving us an opportunity of examining the state of the ligature in reference to the vessels, before proceeding to tie it. The ligature was found

to envelope the artery properly ; and the iliac vein and nerve were free from its embrace ; but, there was observed lying on the artery, and in such a manner, that the noose of the ligature, when drawn, must have taken it in,—a *vein*, of very considerable magnitude ; as large at least as one of the brachials. It turned out to be a vein which, though neither noticed by surgeons in reference to this operation, nor even by anatomists in their systematic writings, I find to be always present in this situation—namely, the *internal circumflex ilii vein*. The companion of the artery of the same name, and deriving some additional branches frequently from the upper part of the thigh, this vein crosses the iliac artery obliquely, to empty itself into the iliac vein, at a point varying from half an inch to an inch above Poupart's ligament (see Plate). A portion of the anterior surface of the iliac artery is, therefore, occupied by the oblique crossing of this vein at the spot on which it is usual to apply a ligature ; and unless the precaution of excluding it be taken, it may, as was near happening in this case, be either wounded or included with the artery in the noose. Now, as every possible source of failure in such a hazardous operation should be studiously guarded against, and as wounds or ligatures of veins are especially dreaded by surgeons, I have deemed it right to make a public statement of this incident—I may call it a fact—as it has occurred to me. In my patient, the ligature, after having been passed round the artery as above described, was found appearing on the inside of that vessel below the termination of this *circumflex ilii vein* in the iliac vein ; and, on the outside, it lay above the point where that vein had first applied itself to the artery, so that, had the noose been secured, as it thus lay, the vein and artery must have been tied together by it. At the suggestion of Professor Colles, however, who saw danger in such a finish to the operation, the outer end of the ligature was drawn down from under the circumflex vein, by means of an eye-probe, so that, when tied, that vein might not be involved in its noose.

The ligature being thus properly adjusted, it was tied in the ordinary manner ; but with, perhaps, a more than usual degree of tightness ; and one end being cut off near the noose, the other was left hanging from the centre of the wound. The wound was then brought together by three stitches of interrupted suture, assisted by a few adhesive straps, a slight compress, and a few turns of a roller ; and the patient was laid in bed, with the thigh semi-flexed by a pillow under the ham. Indeed constraint of any kind was unnecessary, as relaxation of the limb was, in itself, sufficient to effect the full co-aptation of the lips of the wound, and to take away all tendency to protrusion of the bowel. The amount of the injury inflicted on the strength of the abdominal parietes by this operation, appeared as little as could be well supposed compatible with the act of passing a ligature round this vessel ; and the nature of that injury was such, as admitted most easily and certainly of subsequent reparation. The time occupied in the operation did not exceed twenty minutes.

From the moment of the tightening of the ligature, all pulsations in the tumour, and even in the femoral and tibial arteries ceased to be appreciable by the finger ; and, nevertheless, the temperature of the limb underwent no diminution ; neither did the patient experience any unusual sensations in it, from the sudden change in the condition of the circulation. On the contrary, he expressed himself much delighted at having got rid, even for a moment, of the horrid feeling of apprehension, which had been kept up by the incessant throbbing in the tumour, ever since his attention had been first drawn to it ; and which had kept him in a continued state of inquietude. After the operation, an anodyne was administered, and the patient lay quietly and free from pain for a couple of hours.

Ten o'clock, P. M. Temperature of both limbs alike ; feels comfortable and free from pain ; pulse natural ; no pulsation in the tumour.

24th, 8 A. M. Passed a restless night ; complained of pain

and numbness in the leg and foot, which felt a little cold for some time. The temperature of both limbs is now, however, good ; that of the aneurismal being one degree lower than the other. There is not the least pulsation, or bruit in the tumour, or in the artery leading to it. He feels no pain in the aneurism or in the situation of the wound ; no headach ; urine abundant ; tongue whitish ; some thirst ; pulse 80, soft, full, and compressible.

Ten o'clock, P. M. Has been dozing quietly all day, and temperature of limbs has been alike, but he is now restless ; pulse 90 ; temperature of the right limb, in the ham, 98, that of left, only 96.

V. S. ad  $\frac{3}{4}$  vi. ; Aceti Opii, gtts. xxv. statim.

25th. Passed a quiet night, having never stirred off the right side ; feels much less uneasiness in the left leg ; pulse 88 ; the blood drawn last night is firmly coagulated and buffy.

*Haustus Anodynus horâ somni.*

26th. Had a very comfortable night ; feels no pain ; pulse 84, soft ; temperature, in ham of sound limb  $97^{\circ}$  ; in that of aneurismal,  $95^{\circ}$  F. No pulse either in the tumour or in the artery leading to it. The wound was dressed this morning, and appeared free from swelling or inflammation. The edges were accurately in apposition. A few drops of reddish purulent discharge appeared about the ligature ; all the rest of the wound seemed as if it had united by the first intention. Bowels not moved since the morning of the 24th.

*Injiciatur Enema Purgans statim.*

*Repetatur Haust. Anodyn. nocte.*

27th. Had a comfortable night ; no change in the symptoms.

28th. Slept soundly ; looks well ; no thirst ; appetite good ; pulse 80, soft ; temperature of limbs equal ; bowels confined.

The tumour has diminished in size, and become firmer to the touch. No pulsation can be felt in it, or in the popliteal or

tibial arteries. The patient can lie on the affected side for a considerable time without uneasiness. The wound looks well. The sutures were cut out. About a drachm of healthy pus was squeezed out of one of the needle-holes.

℞. Infus. Sennæ Comp. ʒi.

Pulv. Rhei, gr. xv.

Sulph. Magnes. ʒii. M.

Fiat Haustus ; sumatur statim.

29th. Had a good night, pulse 70 ; no increase in the quantity of pus ; no surrounding swelling or inflammation. Both limbs are of the same temperature, but the left foot is prone to get cold unless wrapped in flannel or otherwise artificially heated.

July 1st. Some uneasiness felt last night in the abdomen, but it was only the result of flatulence ; tongue furred ; pulse 76 ; bowels confined ; very little hardness about wound ; discharge diminished.

Habeat Haustum Purgantem.

3rd. A very small quantity of thick pus discharged round the ligature, elsewhere the wound is nearly cicatrized ; sleeps well ; the tumour is reduced in size, and continues free from pulsation.

7th. Makes no complaint of anything ; wound completely cicatrized, except at the site of the ligature ; appetite good ; tongue clean ; a warm jar is employed to maintain the temperature of the foot at the proper standard.

9th. Circumference of both legs equal below the knees. The tumour is decidedly diminished in size and increased in solidity ; it continues free from pulsation ; pulse 72 ; general health very good.

14th. This morning—being the twenty-second .since the operation—the ligature came away. The noose in which the artery had been included was exactly of a size to admit a moderate-sized pin. On turning the man on his face and applying a

stethoscope to the back of the pelvis, a strong pulsation, accompanied with a loud sound, like the placental soufflé, was perceptible in the sciatic artery. Whether this bruit existed there from the date of the tying of the iliac artery cannot now be determined.

22nd. There is a small fungus of granulations at the orifice from which the ligature had escaped, but there is scarcely any discharge of matter. Patient allowed to sit up.

28th. The tumour has greatly diminished and continues free from uneasiness or pulsation. A faint undulation is distinguishable in the popliteal and anterior tibial arteries, but it does not amount to a pulsation.

30th. The tumour to be covered with straps of soap plaster ; the patient allowed to go about on crutches, but not to use the limb.

August 22nd. The aneurism is greatly reduced in size, and is very hard and firm to the feel. The wound has been completely healed for the last fortnight, and appears only as a narrow line, little more than two inches in length. The temperature of this limb is more easily raised and lowered than that in the sound one, and when cold, the patient experiences a feeling of numbness in it.

25th. Discharged cured.

I have had frequent opportunities of seeing this man since the operation, and have found him always in excellent health, and without any inconvenience from the effects of the aneurism.

The only point of particular interest in this case, beyond the general confirmation which it gives as to the safety and efficacy of a ligature on the external iliac for the cure of aneurism of the thigh, and the proof which it affords of the abundance of anastomotic provision for carrying on the circulation when the artery is tied so high, is the fact which I have stated respecting the *circumflex ilii vein*. This vein may vary a little as to size or position, but I have never found it altogether wanting. The subject from which the annexed drawing was taken was a thin

female. The vein on the left side occupied the exact position there shown; that on the right lay a little more down, viz. more under Poupart's ligament. In looking over some injected preparations which I made some years since for the Museum of the College of Surgeons, I found this vessel exhibited therein even more strikingly than in the plate here given; but, it was only when my attention was directed to it, practically, in the above case, that I discovered in the preparations a full verification of the universality of its presence.

I consider that this vein might become a source of embarrassment or danger in this operation, in several ways. Its inclusion in the ligature might, from its close proximity to the vena iliaca, give rise to a phlebitis, which, if propagated to the latter vessel, would be likely to terminate unfavourably. It might also create evil from being wounded by the aneurism needle while carrying the ligature round the artery; or, by exposing the iliac vein itself to a wound or puncture from the instrument, by the manner in which it fixes that vessel to the side of the iliac artery, at the point of its origin from the vein—for these parts are all firmly bound together at this spot in a common fibrous sheath. It may be readily conceived also, that in attempting to cut open, with a bistoury, the sheath which connects the iliac artery and vein, in order to facilitate the passage of the aneurism needle, as recommended by Mr. Abernethy, this vein runs many risks from the edge of the knife, and if wounded thereby would, from its proximity to the great iliac vein, pour out blood most profusely. It is here in close connexion to the fibrous envelope of the vessels, partly, indeed, inside their sheath. In ordinary post mortem examinations, it attracts little attention, its coats being thin, and its cavity empty; but during life, when full of blood, or after death, when injection has been thrown into it, its size and importance become apparent.

Whether any or all of the incidents I have alluded to may not have, in some measure, occurred in operations on the external iliac artery at this part, I cannot take on me to say;

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but, that they are very possible, I have no doubt on my mind whatsoever.

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EXPLANATION OF THE PLATE.

It represents a dissection of the left groin, with the great vessels passing under Poupart's ligament.

- A. The pubis.
- B. The anterior superior spine of the os ilium.
- C. Poupart's ligament.
- D. D. The peritoneum, pushed upwards.
- E. The femoral artery.
- F. The femoral vein.
- g. The internal circumflex ilii vein.
- h. The internal circumflex ilii artery.

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ART. IX.—*Observations on the Nature and Treatment of Dropsy, particularly of Hydrothorax and Anasarca, with Cases.* By JAMES O'BEIRNE, M. D., Vice-President of the Royal College of Surgeons in Ireland, Surgeon Extraordinary to the Queen, one of the Surgeons to the Richmond Surgical, Whitworth Chronic, and Hardwicke Fever, Hospitals, &c.

It appears to me that our views of the nature of dropsy are not only imperfect, but erroneous ; and it is certain that we cannot congratulate ourselves upon the amount of our success in its treatment. Latterly, indeed, we appear to have been more engaged in a search after new diuretics, than in laying down sound principles to direct us in the employment of these and other remedial means already in our possession. Every attempt, therefore, however humble it may prove, to lay down such principles, and to render the treatment of the disease more successful, should be met in a spirit of great indulgence. My chief motive for

making such an attempt will be found in the fact, that, for nearly twenty years, I have not only adopted some peculiar views of the nature of the disease, but also put them, with success, to the severe test of practice. The subject is too extensive, and the limits of this article are too confined, to permit me to do more than sketch it, and, in doing so, I shall merely state my own views and practice, and not embarrass myself with those of others. Without further preface then I shall go abruptly and at once *in medias res*.

From what system of vessels is the fluid effused in dropsy derived? It is generally considered to be effused from exceedingly fine vessels, called exhalants, which have their origin in the capillary system, and terminate on the surface of membranes and the cellular laminæ of the skin, or in the tissues of organs. But such is their extreme tenuity, that it is impossible, by the ordinary means, to ascertain whether they belong to the arterial or the venous system. On this point, however, there are other means of approximating to the truth. Thus, Arteries are not very extensible; when tied, they rarely pour out any of their contents, but relieve themselves by the enlargement and anastomosis of their small lateral branches; and when not tied, but much distended, their minute branches pour out either blood or coagulable lymph, not serum: Veins, on the contrary, are very distensible, and when tied, compressed, or obstructed in any way, they rarely relieve themselves by their small lateral branches, but by extension of their coats, and if that prove insufficient, by the effusion of serum, not of blood. No points in physiology or pathology are more completely determined than these, and the contrast which they exhibit is strikingly favourable to the conclusion, that the exhalants are intimately connected with the venous, and not with the arterial system. This being the case, it is natural to infer, that a system so connected with the source of the fluid effused in dropsy, must perform an important part in producing the phenomena of the disease. Accordingly, I shall put the truth of this inference to

the most rigid scrutiny, by taking the venous system as the basis of all my inquiries on the subject.

To commence, then ; if it be true that obstruction to venous circulation is the main cause of the effusion of serum which occurs in dropsy, it should follow that the causes of the disease are of a nature to produce such obstruction. That such is the case I shall endeavour to show. Here, however, a difficulty arises, for not only the causes, but the species and varieties are numerous. But I propose at once to escape this difficulty, to avoid repetition, and to give a more simple and natural view of the subject, merely by selecting hydrothorax, on account of its implicating various other and distant parts of the body, and being more immediately connected with the general, than the abdominal or portal venous system. The chief causes of hydrothorax are disease of the lungs and their investing membrane ; disease of the heart ; great enlargement of the liver or the spleen ; ascites in a very advanced stage ; venous plethora ; cold ; and malformation of the thorax. I shall briefly consider each of these separately, and show that they all occasion venous obstruction.

When any portion of one or of both lungs becomes either hepatized, or occupied by tubercles, hydatids, or abscesses, that portion is no longer permeable, and consequently the capacity of these organs to admit circulation through them, is, *pro tanto*, diminished ; while the quantity of venous blood to be circulated remains undiminished. Such being the unequal relation which they bear to each other, it is clear that the venous blood cannot pass through the lungs, without meeting with obstruction, proportional to the extent of impermeability so produced. Again, when, as in pleuritis, a quantity of serum is effused into the cavity of the pleura, the effused fluid compresses the lung, diminishes its capacity, and obstructs its circulation.

When the parietes of the left ventricle of the heart become either atrophied or hypertrophied, or when the valves of this ventricle, or those of the aorta, are diseased, the action of the

heart, although often apparently strong, is really weak, and, of course, unequal to propelling the blood as quickly as it is received. The natural consequence is, that the pulmonary veins soon become congested, and cause obstruction to the whole of the lesser circulation. It is not unlikely, also, that the congestion of so much arterial blood may excite inflammation and hepatization of the lung, and, of course, still further diminish the capacity of that organ.

When either the liver or the spleen is so enlarged as to press the diaphragm upwards into the thorax, and compress the corresponding lung, the circulation through that lung is obstructed. The same effect, but in a greater degree, is produced by the pressure which a large collection of serous fluid in the cavity of the peritoneum exerts upon both lungs.

In old or elderly persons, it is computed that the venous system contains nearly two-thirds of all the blood of the body, whilst there is no increase of the capacity of the lungs, through which that great quantity is to be circulated in a given time. It is evident that such a disproportion cannot long exist without causing obstruction of the pulmonary circulation. Some may consider this as a mere theory, and doubt that hydrothorax is ever produced merely by the venous plethora of advanced life, or without the cooperation of some previous disease of the lungs, or other cause. Such an opinion, at least, has been frequently expressed to me. But I am satisfied that examples of the disease arising solely from this cause have often come under my observation, and some of them will be found among the cases hereafter to be detailed. The subjects were persons advanced in years, and remarkable for their previous good health; the attacks occurred as often in warm as in cold weather, and could not be attributed to any other cause than, perhaps, full living and inactive habits; the symptoms were gradual increase of difficulty in breathing; as gradual decrease of the secretion of urine; slight puffing of the eyelids, cheeks, and ankles; occasional palpitation; quick, full, soft, irregular, and sometimes

intermitting and compressible pulse, and slight dulness on percussion of the chest. Such cases yield quickly to moderate depletion, and for this reason, perhaps, their real nature, which seems to consist in œdema of the lungs, has been overlooked.

One of the acknowledged effects of continued exposure to severe cold, is that of repelling the venous blood from the surface of the body to the deep-seated veins, and from them to the heart and lungs. Such a great and constantly increasing quantity of blood cannot, it is obvious, circulate through organs, the capacity of which is not increased, without very considerable obstruction. Hence, cold is a very common cause of the disease.

When, either from congenital malformation, or from the effects of rickets, or of curvature of the spine, the thorax is deformed and its capacity diminished, the lungs are unable to expand so as to admit of the free transmission of blood, and the consequence is obstruction to the lesser circulation.

It appears, then, that all the causes of the disease are divisible into two classes—those which act by diminishing the capacity of the lungs—and those which act by increasing the quantity of blood sent to the lungs; and that all of them are of a nature to produce the obstruction in question. But it sometimes happens, and not unfrequently, that several of these causes co-exist in the same person, and combine to produce a proportionally higher degree of the same effect.

Such being the state of the facts, the part of the subject which naturally comes next under consideration, is the effects of obstruction upon the lungs and the left side of the heart. Premising that the branches into which the pulmonary artery divides are really veins, the first effect must be that of excessive distention of these veins, and the second that of effusion of serum into the cellular tissue of the affected lung, or, as the cause may be, of both lungs. This effusion, by still further diminishing the capacity of these organs, causes another to take place; and so on, effusion succeeds effusion, until the whole of

the pulmonary cellular tissue, and the cavity of the pleura corresponding to one or both of the organs engaged, become filled with serous fluid. During this process, the veins, properly speaking, of the lungs, are more and more compressed, and effects of a different description are produced, and which may be thus explained: It is a well known hydrodynamic law, that the current of every fluid is accelerated when the diameter of the tube through which it flows is diminished. Accordingly, compression of these veins greatly increases the rapidity of the passage of blood through them, and, in this way, a much greater quantity of arterial blood is sent to the left side of the heart, in a given time, than either its auricle can receive, or its ventricle expel. Hence, strong, frequent, and irregular action of the heart; reflux and congestion of the pulmonary veins, which are really arteries; over-distention and rupture of some of their small branches, and ultimately hæmoptysis, ensue. But, during the whole time that these changes are going on, it is manifest that the right side of the heart is also excited to similar action, for the systole of the right ventricle is opposed, and rendered imperfect, by the constantly diminishing capacity of the lungs and their vessels, whilst the right auricle has to resist the entrance of two great and constantly increasing columns of blood, urged on by various forces acting from behind. The consequence is, that both are forced into stronger and more frequent action, particularly the auricle, which, at each systole, repels the blood in the two great trunks of the venous system, upwards into the vena cava superior, and downwards into the vena cava inferior.

Having proceeded thus far, there now arises a question of great importance, and of as great difficulty. It is this—when the two great trunks of the venous system are thus over-distended, what are the effects produced by that distention upon the different organs and parts of the body from which these trunks receive blood? In order to give a satisfactory answer to this question, it is necessary previously to direct attention to

certain circumstances connected with the effusion of serous fluid, and which so uniformly attend it as to constitute so many laws regulating its occurrence. The following are the circumstances to which I allude :

First. In dropsy, the serous fluid is almost always effused into either the minute cells of the cellular membrane, or into large or small serous cavities, or into both. In rare cases, as in dropsy of the uterus, and stomach and bowels, it is effused from mucous membrane. But it is never effused into tissues of denser or more complicated structure, such as those of the soles of the feet, the plantar aspect of the toes, the palms of the hands, the palmar aspect of the fingers, the ears, the hairy scalp, the liver, and perhaps other internal organs. The direct inference from these facts is, that as a general rule or law, great tenuity and simplicity of structure, and, of course, equal simplicity of function, are essential to the occurrence of serous suffusion, and, consequently, that this process is one of exhalation, not of secretion.

Secondly. When a vein is obstructed, effusion of serum takes place, not at the point of obstruction, but at an infinity of points the most distant, or nearly so, from that point; that is to say, it takes place from the numberless exhalants connected with the minute radicles or origins of the obstructed vein. Thus, for example, the pressure of the gravid uterus upon the great veins of the abdomen, causes effusion of serum into the cellular tissue of the toes, feet, and ankles, not into the cavity of the abdomen. This law is so general as to have no exception.

With the aid of these laws, and commencing with the vena cava superior, and venæ innominatæ, I shall now endeavour to show the effects which obstruction produces upon the main branches of these great veins, and through them, upon different organs and parts. In doing so, I shall not follow the anatomical order, but that best suited to the purpose; and proceed upon the principle, that when the trunk is greatly distended,

and congested, the branches are proportionably obstructed, and relieve themselves by the effusion of serum.

When, in this way, the vena azygos becomes obstructed, various effects ensue. Thus, the bronchial veins pour into the air-cells, or vesicles of the lungs, a quantity of serous fluid, which excites coughing, and, mixing with the natural secretion of these cells, constitutes the sero-mucous expectoration peculiar to the disease; this fluid, also, by impeding the access of atmospheric air to those cells, causes imperfectly arterialized blood to be sent to the left side of the heart, and there, by its noxious quality, to still further excite the action of that organ—the veins of the pericardium effuse a similar fluid into the cavity of that membranous sac, and increase the difficulty of the heart's action—the large and numerous venous plexuses situated in the interior of the spinal column also discharge their contents chiefly into the vena azygos, and these also effuse into the space between the vertebræ and the theca vertebralis a considerable quantity of serum, which, by its pressure, causes, or assists in causing, the paralysis which occasionally attends the disease—lastly, the intercostal veins are the source of that œdema of the side of the chest which is occasionally seen; and also, perhaps, of some portion of the watery fluid contained in the cavity of the pleura. The two internal jugular, and the two vertebral veins, being equally obstructed, serum is effused into the ventricles and beneath the arachnoid coat of the brain, and also into the cavity formed by the arachnoid membrane of the medulla spinalis, and this fluid, by its pressure, causes, according to its quantity, either apoplexy, or paralysis. Both subclavian veins being also obstructed, the consequence is œdematous swelling of the wrists, and backs of the hands and fingers, which afterwards extends to the forearm and arm.

Of the foregoing veins, the two jugular, and the two subclavian are large, distensible, and have no valves. They admit, therefore, of considerable reflux and congestion, and, in this way, relieve their distended trunk. The vena azygos, also, con-

tributes to produce this effect, for it has no valves, and although comparatively small, its long and downward course is very favourable to reflux, and congestion. But, in the early stage of the disease, as soon as a fresh effusion takes place, the contents of the trunk are enabled to enter the heart, and thus relieve the congested state of its branches. As each effusion, however, renders the passage of blood through the lungs more difficult, a similar distention of these vessels is soon produced, and again relieved by the same means. Proceeding in this order of distention, and relief, some of the effects of obstruction of the vena cava superior and its branches, such as apoplexy, and paralysis, are postponed to an advanced stage of the disease, when the lungs become so impervious that even this kind of relief can no longer be given.

Unlike those which have been just considered, the two external jugular veins have valves, two of which are placed one at each side, exactly at the point where each enters the corresponding subclavian vein. When the latter is distended, it is manifest, than an immediate effect of the pressure of the congested blood is to push up and raise these valves, and by doing so, to effectually obstruct the vessels to which they belong. It is equally manifest, that this obstruction will continue, until the distended state of the subclavian is more or less relieved. Under such circumstances, effusion of serum into the fine reticulated tissue beneath the integuments of the lower eyelids and cheeks, becomes the natural consequence ; and we now see why it is, that a puffed and swollen state of the face is both a constant and an early symptom of the disease.

To complete this division of the inquiry, it is necessary to consider the effects of obstruction, upon a system of vessels of another description, which perform an important part in dropsy, which resemble veins in several respects, and the trunks of which enter and terminate in the subclavian veins. I allude to the lymphatic system. Nearly all the lymphatics of the body discharge their contents into two small, delicate, trunks,

called thoracic ducts. Of these ducts, the left, or greater, enters the left subclavian vein, while the right, or lesser, enters the right subclavian, at its junction with the right internal jugular vein; and the mouths by which they terminate have within them a pair of valves, one of which is placed at each side. Such being the arrangement of these vessels, it is obvious that, as in the instance of the external jugulars, one of the immediate effects of distention of both the subclavian veins, will be to raise up these valves, and maintain them raised, until that distention becomes relieved in the manner already pointed out. When this occurs, the contents of these ducts are thrown back upon, and raise up, the nearest valves, and, so on, until the obstruction reaches even to the capillary origins of nearly all the lymphatics of the body. Again, the comparatively few vessels of this system, which do not terminate in either of the thoracic ducts, enter various other veins, which, being also distended, prevent even these few from discharging their contents. In this way, from an early period of the disease, and from time to time during its course, the whole of the system in question becomes obstructed and distended, and lymphatic absorption ceases from a physical, not a vital cause. This conclusion may startle those who are wedded to old opinions and routine modes of treatment; but those whom neither have deterred from employing venesection more frequently than usual, in the treatment of the disease, will recollect, how often they have been struck by the rapidity with which considerable dropsical swellings have disappeared, even after a moderate bleeding from the arm. No fact can better illustrate the strict relation existing, in this instance, between the assumed cause and its effect.

We now come to the consideration of the next division of the inquiry, namely, the effects of obstruction upon the vena cava inferior and its branches, and, through the latter, upon the different organs and parts from which they derive their blood.

When the column of blood in the vena cava inferior is not only not received, but actually repelled by the right auricle

of the heart ; the first effect is to throw that column back upon, and raise up the valves nearest in a direct line, which are those situated at the upper extremity of each femoral vein, so that the blood cannot descend further than the external iliac veins. Neither can it find a passage downwards through the internal iliac veins, further than their small branches, all of which are supplied with valves. In this manner, the femoral, and the other veins of the lower extremities, become obstructed and distended ; and the consequence is œdema of the ankles, and the feet, with the exception of their soles. Hence it is, that effusion of serum into these parts is so early and constant an attendant upon the disease. By degrees, the legs, and afterwards the thighs, become similarly affected, until the lower extremities are completely infiltrated, and present a swollen, very misshapen, and deadly pale appearance. Long before, however, the effusion has reached to this height, other parts gradually become implicated ; for the right and left pudic veins are equally obstructed and distended, and the consequences of this state are ; watery swelling and paleness, and disappearance of the rugæ of the scrotum, and also similar swelling and paleness, with elongation and spiral twisting of the prepuce.

I should next proceed to the effects of obstruction upon the other branches of this large vessel, and the organs from which they derive their blood ; but I find it impossible to show what these effects are, or how they are produced, without first supplying an important defect in our knowledge respecting the forces by which the blood of the great vein itself is moved upwards, in the natural state.

The vena cava inferior is the largest, and, with some few exceptions, the longest vein in the body, and more direct in its course than any other ; it is destitute of valves ; and, unlike veins in general, it is not, at any one point, in contact with its corresponding artery—the abdominal aorta ; yet its great column of blood is regularly transmitted to the heart, against the force of gravity, and apparently without the aid of several of the or-

dinary means of propulsion. How are we to reconcile this seeming mal-adaptation of structure to function? and how are such obvious disadvantages compensated and surmounted? These questions have long occupied the inquiries of physiologists, but, if I do not deceive myself, they all have unaccountably overlooked other anatomical arrangements, by which greater propelling forces than any which they have as yet discovered are supplied, and supplied in the following admirable manner:

First, we see that the right common iliac artery, passing obliquely outwards and downwards, crosses in front of, and in close contact with, the vena cava inferior, exactly at the point where the junction of the two common iliac veins constitutes this great vein. It is obvious that, at each pulsation, this large artery strikes the subjacent vein, compresses it against the side of the body of the fourth lumbar vertebra, upon which it lies, and thus communicates a direct, powerful, and constant impulse to the column of blood in the cava. It is equally obvious that this impulse is exerted in an upward not a downward direction, for it should be carefully borne in mind, in this as well as in every other instance to be hereafter mentioned, that the pair of valves placed at the upper extremity of each femoral vein effectually prevent the further descent of the blood.

Secondly, we see that, at a higher part of its course, and where it is most required, the inferior cava receives a direct impulse from the right renal artery, as it passes behind, and close to that vein.

Thirdly, at this point, it also receives greater, though indirect impulses, and in this way, the left renal vein is much longer than the right, passes obliquely upwards from left to right; lies in front of, and close to the corresponding artery and its branches, then crosses in front of, and close to the abdominal aorta, and finally enters the cava at a very obtuse angle, and of course, as much as possible in the direction of the current of blood in the latter. Again, the right renal vein is by one-half shorter, more direct in its course, enters the cava lower down, and at a

still more obtuse angle than the left renal vein, but, like the latter, passes in front of, and close to its corresponding artery (not including that portion covered by the cava). In this way, the vein has an impulse given to it by its subjacent artery. It is obvious that these impulses are excited in the direction of the heart, where there is least resistance, and not in the direction of the kidneys, the dense and unyielding structure of which may be reasonably supposed to resist almost any degree of reflux.

Fourthly, all the right lumbar arteries, as they pass behind, and in close contact with the cava, give to it a direct impulse; and, in the subsequent part of their course, an indirect one, through the medium of their accompanying veins.

Fifthly, the left lumbar arteries, by acting on their corresponding veins, give more or less of impetus to the contents of the cava.

It appears, then, that this great vein constantly receives impulses from four large, and eight or ten small arteries; and that all these impulses, although communicated in several opposite directions, are all exerted upwards; and when we also take into account the *vis a tergo*—the uniform pressure maintained by the alternate movements of the abdominal muscles and diaphragm—the aspiration or suction of the heart during inspiration—and the great elastic power of the vein itself—it must be obvious that, in the healthy and natural state, the forces by which its column of blood is sent upwards to the heart are not only very great and various, but more than sufficient to counteract the disadvantages of its great size, and long and direct course against gravity. In fact, nature, in order to effect so great a purpose, seems to have converted this vein into a kind of forcing-pump of no ordinary power.

Having completed this physiological view of the vein in the healthy state, it remains to inquire into its condition in the disease under consideration. To commence then, when the circulation through the lungs is so impeded, that the right auricle of the heart can no longer admit venous blood as usual; when, on

the contrary, that auricle, at each systole, repels it upwards and downwards ; and when the valves of the femoral veins prevent its further descent, what then is the state of the column of blood in the vena cava inferior ? When so circumstanced, it is scarcely possible not to come to the singular conclusion, that while thus imprisoned, as it were, it is powerfully agitated in every direction, from above downwards, from below upwards, from right to left, from left to right, from before backwards, and from behind forwards. If such be really the state of this vein, how, it will be asked, is it relieved ? It must be conceded that all these forces, as they act at the same moment, and become increased in power proportionally to the resistance given to them, will drive the blood through any outlet, however unfavourably situated, that may still remain, provided such outlet be not capable of offering superior resistance. This principle being granted, we immediately perceive that the only remaining outlet is that presented by the *venæ cavæ hepaticæ*. These veins, three or four in number, enter the vena cava inferior, just as it is passing through the tendinous opening in the diaphragm ; their mouths are large and always found wide open ; they admit of reflux, for they have no valves, and water or size injected through them, passes freely into the vena portæ, and *vice versa* ; they are indirectly connected with a large cellular and highly elastic organ, and one eminently capable of acting as a great reservoir ; lastly, the powers which propel the blood of the portal system are very feeble compared with those which propel that in the inferior cava. In every respect, therefore, these vessels and the rest of the portal system, instead of offering resistance, seem to be constructed with the design of not only facilitating, but providing for, determination towards them. Taking, then, all these facts and arguments into due consideration, the conclusion seems inevitable, that the vena cava inferior, assisted by the right auricle, is made to act somewhat like a forcing-pump, and relieves its over-distended state by driving its blood through the open mouths of the *venæ cavæ hepaticæ*, on to the vena portæ, thence

to the splenic vein, and, finally, into the cells of the spleen, preceded, of course, by that previously contained in the hepatic veins.\* According to this view, the hepatic veins act as so many diverticula, or by-paths, while the spleen supplies a large reservoir, for the relief and safeguard of the inferior cava; yet, that a vein so essential to life, and so peculiarly and dangerously circumstanced, required some such provision against rupture, is a point that must be admitted; for, without such a provision, its external coat, although remarkably stronger and more elastic than that of any other vein, would offer but feeble resistance to the force with which it would then have to contend, and rupture would be the frequent consequence. There are, however, as far as regards the spleen, some arguments which may be op-

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\* I had written thus far, when I happened to have some conversation with Professor Hargrave, on the subject of reflux through the *venæ cavæ hepaticæ*. He informed me that he had written in 1836, a paper on the uses of the spleen and *vena portæ*, derived from anatomical facts, in which he advocated opinions similar to mine, but that he had not published that paper. Never having heard of it, and anxious to avoid even the appearance of appropriating to myself the opinions of another, I asked permission to read the paper, which he granted in the kindest manner. We met on the following day, and after exchanging manuscripts, found that we agreed respecting the reflux in question, but differed decidedly as to the means or forces by which it is effected. I expressed my regret that he had not published views which were really so interesting, and was afterwards much pleased in seeing them inserted in the *Dublin Medical Press* for the 10th of last August. They can now, therefore, be referred to, and it will be seen that his opinion is this: that in cases of impediment to the cardiac and pulmonary circulation, "the blood is capable of being regurgitated into the large hepatic veins," and from these, into the *vena portæ* and spleen. It will be seen, also, that he makes no allusion whatever to the forcing power of the *vena cava inferior*, or, as it seems to me, to any force capable of propelling the blood through such a circuitous route, other than that resulting from impediment to the ascent of the blood. It is not, however, for me, but the profession, to decide the various differences between us. Be that decision as it may, I cannot but feel that my advocacy of such a novel opinion must gain great additional strength from the support of so able a physiologist as my distinguished friend, Professor Hargrave.

All the circumstances connected with the degree of coincidence in our views on the subject, seem to call for the foregoing statement and remarks.

posed to this inference. It may be urged that the spleen has been extirpated, not only in dogs and other animals, but also in man, by Ferguson (*Philosophical Transactions*, 1738) and Crugor (*Ephem. Germ.* Dec. 1, Ann. IV. and V.), and that, so far from rupture of the inferior cava taking place, and instantly causing death, both men and animals have frequently survived, and generally without suffering any apparent inconvenience. But this objection is easily answered, for it is an important fact (see *Dictionnaire des Sciences Médicales*, Art. "Rate"), that all the men and animals from whom the spleen has been extirpated, were in perfect health at the time. In such subjects, of course, there was no obstruction to the passage of blood from the inferior cava to the heart; no necessity for its transfer to the spleen, and, consequently, no indication of the want of such a reservoir. Again, it may be urged, that this organ is often solidified by disease, and that the patient often suffers little more than a sense of inconvenient weight. Such persons, however, are also otherwise healthy, and for the same reasons as those just assigned, do not absolutely require a sound organ of the kind. But the spleen often becomes so enlarged as to cause hydrothorax, by pressing upon the lungs and diminishing their capacity, as well as that of the cavity of the thorax, and it may be objected, that, in such cases, the inferior vena cava necessarily becomes over-distended, yet that rupture of that vessel does not occur, although the organ, being no longer cellular, is incapable of performing the office of a reservoir. To remove this objection it is only necessary to observe, first, that the vena portæ, the splenic veins, and the mesenteric veins, with their numerous large and freely anastomosing branches, still remain; secondly, that from their great size, extensibility, and freedom of intercommunication, these vessels are collectively capable of supplying a very considerable reservoir; thirdly, that these veins, when greatly overloaded, can relieve themselves by gradual effusion of the serous portion of their blood into the cavity of the peritoneum, and thus produce ascites, a very common con-

sequence of enlargement and solidification of the viscus in question. By common attention to these and the preceding points, we are at once enabled to satisfactorily explain, not only how it is that the office of the spleen is often supplied, but also how it is that either its extirpation, or its solidification, entails neither loss of life, nor any apparent inconvenience. Still, it may be said, and very naturally, that the answers to these objections proceed, in a great degree, upon an assumption, namely, that the spleen performs no function of any value in the healthy or normal state of the body, and that in disease it merely acts as a reservoir for the relief and protection of the vena cava inferior, and also, as all must admit, of the stomach, liver, intestines, and pancreas. Yet, some facts seem to strongly support this opinion, and go far towards settling the long undecided question respecting the uses of this organ. The facts to which I allude will be found in the article "Rate," already referred to, but with few of the deductions of which they seem to admit. From that article, it appears that M. Assollant, under the inspection of Dupuytren, extirpated the spleen in forty dogs of both sexes, at all seasons, and of all ages; that one-half of this number died of inflammation of the abdominal viscera; and that the survivors were observed, for two years, with the most scrupulous attention. Experiments so conducted, and under such auspices, deserve to have every confidence placed in their results, one of which bears strongly upon the present question. It is this, that, in not one of the survivors was there observed the least disturbance of digestion, absorption, circulation, respiration, voice, secretion, nutrition, locomotion, sensation, the senses, instinctive faculties, or reproduction. With such a strong fact as this before us, it is scarcely possible to believe that the spleen performs any function whatever in the healthy animal. Yet, strong as this evidence certainly is, it is of a negative kind, and, therefore, insufficient to establish the correctness of such an opinion. But if it could be shown that this viscus, at the moment of its being exposed in

the healthy animal, was found in a contracted state, and that it contained but a small quantity of venous blood, the evidence would then be of a more complete and positive description. It happens unfortunately, however, that Malpighi, Assollant, Ribes, and others, who have experimented on this viscus; all those, at least, whose works are within my reach, have neglected to afford information on these points. But this neglect has not deprived us of other means of making a close approximation to the truth. Assollant, having observed that splenectomized animals never died of hæmorrhage, and that ligatures applied to the divided splenic vessels constantly caused abscesses in the omentum, and death, adopted a peculiar mode of extirpation, which consisted in exposing the organ by a sufficient incision, cutting across its vessels, removing itself, and, without applying a ligature to any of those vessels, proceeding to return the protruded viscera, and to unite the external wound by some points of suture. Again, M. Ribes, author of the article so often quoted, and who has made many similar experiments, makes an interesting statement, of which the following is a literal translation:—"If," he says, "after having exposed the spleen in a living animal, we compress, for a few minutes, the veins of this organ, the blood accumulates there; we see that the spleen becomes distended, swelled, smooth and glossy, but as soon as the compression ceases, we observe this organ to drive out and expel, with a single effort, and at one jet or gush, the blood unusually collected in it; its surface then becomes uneven and wrinkled, and seems in some way to contract itself in different points of its extent." Here, then, is an organ so eminently elastic as to admit of no unusual accumulation, without making a strong effort at its expulsion; and one containing so little blood, that it may be extirpated, without, it would appear, any but an inconsiderable amount of hæmorrhage. These facts show that the healthy state of this viscus is one of contraction, a state totally irreconcilable with every idea of its action as a reservoir. Again, we see that, after the spleen has been cut off, very little

blood flows from the divided splenic vessels, although left untied. The splenic artery, which is really but the nutritious artery of the viscus, is long, transverse in its course, and divides into four, five, or six small branches before entering its substance, so that these branches and their trunk are, perhaps, enabled to retract themselves, on being divided, and thus arrest bleeding. Be this as it may, the fact of blood not flowing from the divided and untied splenic vein, is a proof that, as might naturally be expected, the blood of the vena portæ does not, in the healthy state, retrograde to the spleen, and, consequently, that this organ is not required as a reservoir. If this conclusion be well-founded, it leads to another of some interest. It is this. Amongst the various conjectures respecting the uses of this viscus, one is, that it prepares the blood for the secretion of the bile; and Müller gives it as his opinion, that "the functions of the spleen probably consist in the production of some change, of which the nature is unknown, in the blood which circulates through the tissue, and in thus contributing to the process of sanguification, or in the secretion of a lymph of a peculiar nature, which, being mixed with the contents of the lymphatic and lacteal system coming from other parts, tends to perfect the formation of the chyle;" but it is quite obvious that, if the blood of the vena portæ does not retrograde to the spleen, the latter can neither prepare the blood for the secretion of the bile, nor produce any change in the blood, or contribute to sanguification; while, on the other hand, the idea of the secretion of a peculiar lymph necessary to the formation of chyle, is purely hypothetical. But, to return to the subject, all the facts and arguments which I have adduced, convince me that, in the healthy state, this organ is contracted and at rest; that it contains no more blood than is poured into its cells, after becoming venous, by its nutritious arteries; and that it performs no function but that of a reservoir for the relief of overloaded states of the vena cava inferior, and the whole of the portal system.

From this long but necessary digression, it is time to come back to the consideration of rupture of the vena cava inferior. Such little attention has been paid to its occurrence or its causes, that some may doubt that it is ever produced by such internal causes as I have assigned, or, in fact, in any other way than by external violence. But such doubts are easily removed, for it will be found that Arctæus, Dolæus, P. Poterius, Bonet, Bartholin, Laurentius, Lancisi, Morgagni, Portal, and others, relate instances of instantaneously fatal rupture of this vein; and, it is worthy of particular observation, as bearing strongly on the general subject, that the majority of those instances occurred, not only from internal causes, but either in persons labouring under organic disease of the heart or lungs, or under circumstances the most likely to suddenly determine a great quantity of venous blood to the heart and lungs. Moreover, it is easy to show that such ruptures are but natural consequences of long-continued obstruction to the ascent of blood to the heart. Thus, as soon as the inferior cava is relieved in the manner here pointed out, it is again filled, again becomes overloaded, and a quantity of its blood is again transferred to the spleen; this process is repeated, until at length, not only this viscus, but all the veins of the portal system, become so gorged as to no longer admit of relief to the cava, the coats of which, by being so constantly subjected to strong pressure, become thinned by absorption, and eventually give way before the forces acting upon them. If such, however, be the true state of the facts, it may be asked how it is that rupture of this vein is not of more frequent occurrence in cases of dropsy? The answer appears to be this: First, because either the patient dies before the occurrence takes place, or the gorged vessels relieve themselves by the effusion of serous fluid. Secondly, because the remedial means in general use, check, if they do not remove, the disease, and prevent its acquiring such a pitch of intensity. Certainly, the last of these reasons would seem to be countenanced by the fact, that the greater number of the recorded

instances of rupture of this vein will be found to have occurred at a period when the doctrine of debility and the use of tonics were generally adopted. Nevertheless, I much doubt that such ruptures are quite so rare as may be supposed, for our post-mortem examinations, in cases of very sudden death, are too frequently limited to the head and chest.

Having premised this view of the peculiar condition in which the vena cava inferior is placed, in cases of obstruction to the ascent of its blood, it remains to consider the effects which that condition of the trunk produces upon its main branches, and ultimately, upon the organs from which those branches proceed. The organs in question are the kidneys, the uterus, and the urinary bladder. As has been already observed, both renal veins enter the inferior vena cava at a very obtuse angle, and as much as possible in the direction of the natural current of blood in the latter. But as it is there not only impeded, but repelled, it is manifest that the renal veins, so far from being enabled to empty themselves as usual, must even be subjected, more or less, to the pressure of the column of blood in the cava. When these veins are so circumstanced the circulation through the kidneys must be greatly disturbed, and, as a natural consequence, the functions of these organs are imperfectly performed. The over distended state of these veins is, then, only relieved by the effusion of small quantities of their serous contents into the pelves of these organs; while the blood of their minute arteries, having ceased to be admitted by their corresponding venous radicles, must, at least in small quantity, be poured into the same cavities. Hence, the urine becomes scanty, high coloured, and albuminous. But, as the disease proceeds, even this kind of relief ceases, and with it, the function of secretion, and there is then total suppression of urine. This explanation of a symptom so constantly attendant upon dropsy, is strongly supported by practical facts. In the first place, I have frequently found, that in cases where there was almost a total suppression of urine, the abstraction of even a moderate quantity

of blood from the arm caused the kidneys to actively resume their functions in a few hours, and without the aid of any diuretic. Again, it is well known that the same diuretics which failed to act before, often act energetically after venesection. But, to come from the functions to the structure of these organs, it is obvious that their circulation and functions cannot be thus suspended for any great length of time, without corresponding disorganization of their substance: so that, after all, diseased states of the kidneys may be the consequence, not the cause of dropsy.

Proceeding to the uterus, when the inferior cava is over-distended, it is clear that the uterine veins will become gorged, will relieve themselves by the effusion of serum into the cavity of the organ, and thus, independent of pregnancy, produce hydrometra, of which uncomplicated form of the disease, there are several examples. From the same cause, the veins of the urinary bladder, which are very numerous, also become so overloaded as to be forced to effuse some portion of their serous contents into the cavity of that viscus. In the present state of our knowledge, however, the existence of this variety of the disease may be doubted, on the ground that it has not been observed or distinguished by any author, with the exception of 'Portal,' and that even he, although in his "*Observations sur la Nature et le Traitement de l'Hydropisie*," he devotes a short chapter to it, gives but one example of it, and that obviously one of retention of urine from paralysis of the bladder, caused by a fall during the fifth month of the patient's pregnancy. But the cause of its not having been distinguished, is obvious. In the healthy state, we know that, with the exception of a small quantity of mucus, the contents of the urinary bladder are exclusively derived from the kidneys; but it does not follow that this is the case in dropsy, for it must be admitted that any quantity of serous fluid effused into a reservoir containing even a small quantity of urine, would necessarily acquire more or less of the urinous smell and appear-

ance, and thus lead to error respecting the real source and nature of the fluid discharged from the bladder in dropsy. It is not surprising, therefore, and should not be admitted as a valid objection to its existence, that authors have not distinguished the variety under consideration. This objection being removed, let us see what arguments and facts are in favour of its existence. The first law of serous effusion is, we have seen, that great tenuity of structure, and great simplicity of function, are essential to its occurrence. Apply this law to the kidneys, consider the source of fallacy just pointed out, and it will then seem more natural to conclude, that, at least, the greater portion of the albumen found in the urine of dropsical persons is not derived from these organs, but from the urinary bladder itself, the coats of which are comparatively much thinner, and more simple in their structure. Apply the same law to the uterus and the ovaria, contrast their structure with that of the urinary bladder, and it will be difficult to explain why the latter should not be even more frequently the seat of dropsy than the former. But having thus fairly stated both sides of the question, I must, from want of more practical evidence, leave its decision to those who may happen to be attracted by the novelty or apparent importance of the subject. I contend, however, for one point, and one which it would be much easier to deny than disprove,—namely, that the veins of the urinary bladder are the chief source of the albumen found in the urine of dropsical persons.

Having concluded this sketch of not only the state of the general venous system in dropsy, but also of the various consequences of that state, it only remains to take a similar view of the vena portæ and its branches, which constitute, in some respects, a separate and protective system. When the over-distended state of the inferior cava is relieved, as has been shown, by repeated refluxes through the venæ cavæ hepaticæ, it is obvious that the circulation through the liver is reversed in its direction ;

and that the blood which circulates through this organ is chiefly that of the inferior cava, not that of the vena portæ, which is best adapted to the secretion of bile, and which, from containing the nutritious substances absorbed from the stomach and intestines, must be essentially different from the blood of other veins. Is it not from these combined causes that even in dropsies unaccompanied by any organic disease of the liver, the stools are generally clay-coloured? When all the branches of the vena portæ become much overloaded by the repetition of the refluxes in question, it is also obvious that these vessels will effuse their serous contents into the cavity of the peritoneum, and cause ascites; or, as more rarely occurs, into the cavity of the stomach and intestines. The reason why the latter of these terminations is so rare, is evidently the greater facility for effusion presented by the delicate and simple structure of the peritoneum, as compared with either the stomach or intestines. But all these consequences may arise from causes unconnected with the general venous system, and solely depending upon disease of the different organs which return their blood to the vena portæ. Thus, if tubercles, masses of adipocire, hydatids, abscesses, or collections of blood, form in the liver, all the branches into which the vena portæ divides in the substance of that organ, become compressed and their circulation impeded; if, on the contrary, the size of the liver become diminished, and its substance condensed, as in cirrhosis of that viscus, the same results necessarily ensue; if the pancreas becomes enlarged by disease, the splenic vein is unavoidably subjected to compression, and the consequence is, venous congestion of the stomach, omentum, and spleen; or the enlargement of the viscus may be such as to extend to, and cause, pressure of the vena portæ itself. As to the spleen, it has already been fully considered. It is scarcely necessary to say that such states are, *per se*, sufficient to cause either ascites or effusion of serous fluid into the stomach and intestinal canal.

The plan of inquiry just followed has enabled me to bring

into view, and to explain dropsy as it occurs in various cavities, large and small ; but it remains to consider that which is chiefly seated in the cellular tissue, and which is either not attended, or attended but in a slight degree, with effusion into the lungs or other organs. I mean that common form of the disease called *Anasarca*. The general cause of this affection is cold, or cold combined with moisture. The effect of this agent is, as has been already stated, to suddenly repel a quantity of venous blood from the whole surface of the body towards the deep-seated veins. The valves which all the small veins possess prevent this blood from returning to the surface, while current after current urges it onward to the heart and lungs. But such a quantity is so disproportioned to the capacity of the latter organs, that it cannot be circulated through them without causing great distention of their vessels, and also, perhaps, more or less of effusion of serum into their substance. Hence it is that one of the very first symptoms of the disease is a sense of oppression, tightness, or uneasiness about the chest. But if the cold be not too intense, or applied for too long a time, this sense of oppression is soon relieved, often, as we see, in a few hours, by the occurrence of such a general effusion of serum into the subcutaneous cellular tissue, that the quantity effused is collectively so great, as to proportionally lessen the circulating mass of blood, and by doing so, to check the further progress of the disease, and enable the absorbents to remove such serous fluid as may happen to be effused into the substance of the lungs.

Having here concluded my inquiry into the nature of the disease, I shall now anticipate some objections which may be raised against my views on the subject, and endeavour to reply to them in a satisfactory manner. It may be said that, in cases of pleuritis which terminate in the effusion of serous fluid into the cavity of the pleura, the capacity of the lungs is not diminished *before* that effusion has taken place; that there is, therefore, no obstruction to the lesser circulation, and consequently that the venous system cannot be connected with the production

of that effusion. The answer to this objection is simply this, that, out of a number of cases of the kind which have come before me, I have not met with even one in which the morbid appearances were confined to the pleura, and that, in all of them, the corresponding portion of the substance of the lung exhibited, to a greater or less depth, either hepatization, or serous infiltration, or both of these states. This is also, I believe, the experience of all those who have attended to the matter. Moreover, I have observed, that the cases of pleuritis which terminate by serous effusion, are not those accompanied by intense pleuritic stitch, and remarkably firm, hard pulse, but those characterized by the mixed symptoms of pneumonia and pleuritis.

The chief objection, however, and that which is certain to be raised, and not easily relinquished, will be, that the whole of my inquiry proceeds upon the assumption, that the disease is not of an inflammatory nature. I admit the fact, but am prepared to show other and strong grounds for my total disbelief in a doctrine so generally taught, adopted, and acted upon. Yet, let me not be misunderstood. I admit, that the process of inflammation, by altering the structure, and diminishing the capacities of organs, such as the lungs, liver or spleen, is often a remote cause of the disease; but I deny that, when fully formed, the disease is of an inflammatory nature; and the following are the facts and arguments, upon which I rest such a decided opinion. In the first place, when the disease is the consequence of alteration of the structure of the lungs, liver, or other organs, it must be conceded that, previous to the effusion of serum, the altered parts are no longer the seat of acute, but of chronic inflammation. It must also be conceded, that, after effusion has occurred, the altered parts, as well as the rest of the affected organ are quickly reduced to a perfectly passive state, for it will scarcely be questioned, that the effusion of such a portion of the blood, will act like a bleeding from the arm, with this disadvantage, that the fluid, by being effused into cavities of

the body, and there compressing the adjacent organs, produces the serious consequences already pointed out. That such is really the effect of serous effusion upon inflamed or altered structures, is proved by a fact which bears strongly upon the question at issue, namely, that whenever it supervenes upon inflammation of an organ, it is immediately followed by a distinct remission of nearly all the symptoms which previously existed. Thus, for example, if the case be one of pleuro-pneumonia, or pneumo-pleuritis, the pleuritic stitch, and the dull pain in the chest, instantly cease; the pulse, from being round, hard, and quick, soon becomes full, soft, and much less frequent; and if venesection be employed with any freedom, the blood first taken exhibits more or less of buffing, while that drawn last presents little or nothing of the kind.

If such be the state of the facts at the earliest period, how completely must all inflammatory action have ceased before the disease has become, by a quick succession of such depleting effusions, so far advanced as to attract serious notice. But the facts do not end here. The healthiest person may, in a few hours after exposure to cold, be attacked with anasarca, and not exhibit or complain, either before or after the attack, of any one symptom, such as pain, or frequency of pulse, which can possibly be considered as indicative of inflammatory action. In such cases, also, if general bleeding be resorted to, the blood drawn is rarely found either buffed or cupped. The same may be said of the disease, when it arises from plethora. These facts cannot be questioned. Finally, although the albuminous state of the urine, in this disease, is considered to be the effect of inflammation, that opinion cannot be received as fixed, so long as there are reasons, as I have endeavoured to show, for believing that a great portion of the albumen is derived from the serum effused by the veins of the urinary bladder. Let the reader now attentively consider all these facts and arguments, let him recollect that all the phenomena of dropsy are perfectly explainable upon the simple principle of venous obstruction;

and, he can scarcely, I should imagine, fail to agree with me, that the disease is not of an inflammatory nature.

This view of the nature of the disease might now be considered as concluded, but it would be incomplete if I omitted to notice a point of considerable importance, which is this. It has been shown that one of the very first effects of venous obstruction, is the complete cessation of lymphatic absorption. Accordingly, the effused serum remains unabsorbed, and is not returned to the system. Thus every effusion of the kind may be looked upon as equivalent to so much blood taken from the arm. In this view of the matter, it is clear that the disease cannot arrive at any great height, before the patient's constitution becomes more or less debilitated.

It appears, then, that the general results of my inquiries on the subject of dropsy, are

First, that all the phenomena of the disease are but the products of venous obstruction; and that venous obstruction is caused either by diminished capacity of the lungs, or by an increase of the circulating mass of venous blood, or by both of these causes combined.

Secondly, that the disease is not of an inflammatory nature.

Thirdly, that the disease, with the exception of the early part of its course, is attended with more or less of general debility.

With these general results before me, let me now see what curative indications respecting hydrothorax and anasarca, can be deduced from them. The first of these results manifestly shows, that we have only to remove the venous obstruction, in order to remove the disease; and, that this must be done either by increasing the capacity of the lungs, or by diminishing the circulating mass of venous blood.

With respect to the first of these alternatives, the capacity of the lungs is, in dropsy, either natural or diminished. When natural, as in cases arising solely from either cold or plethora, it would be absurd even to imagine that it could be increased by any means;

and when diminished, as in cases arising from hepatization and a variety of other causes, it cannot be increased without removing those causes, and consequently, without losing time which cannot be spared. It appears, therefore, that we must fall back upon and adopt the other alternative, that of diminishing the circulating mass of venous blood. This being, then, the main curative indication, how is it to be carried into effect? Seeing that our object should be to relieve the obstructed state of the venous system as fully and as quickly as possible, it is clear that we should employ venesection in preference to cupping, which acts less energetically and more slowly. But what quantity of blood should be taken? The second of the general results shows, that we have not to contend with an inflammatory disease, and consequently that the quantity should not be large, while the third of these results warns us against taking more than a moderate, or rather a small quantity, perhaps from eight to ten ounces. Should we repeat the bleeding? One of the immediate effects of the first bleeding should be that of relieving the absorbent system, and enabling it to restore the effused serum to the circulating mass of blood; and we see a proof of this being actually the case in the evident reduction which venesection causes, even in a few hours, in the swelling and cedema of the external parts. It may be safely inferred, therefore, that a short time is sufficient to restore to the venous system as much serum as compensates for, if it does not exceed, the quantity of blood which had previously been taken from the arm. We see the proof of this, also, in a fact, which I have often observed, that although the patient may, at first, bear the bleeding badly, he evidently rallies in a few hours. If necessary, therefore, we need not feel any dread of repeating the bleeding. How often, at what intervals, and in what quantity should it be repeated? It should be repeated when absorption and the secretion of urine become languid, but it will rarely be required to do so more than three or four times during the treatment; the intervals between each should be from two to three or four days, so as not to induce

debility; and, for the same reason, the quantity of blood taken should be reduced in succession from eight or ten to six, and from six to four ounces, the last being the smallest that can be of any decided service. If the patient be young, but of weakly constitution, or if he be old and feeble, and supposing, at the same time, that the disease has arrived at a considerable height, how are we to proceed? We should bleed him from a small orifice, and as much as possible in the recumbent posture; while the blood is flowing, we should give him gin and water in such quantities as may be necessary to support him; and, after the arm has been tied up, he should be ordered to have frequently during the day strong broths, and such other kinds of animal food as may be found to agree with him. This mode of treatment will, no doubt, appear very strange, yet it is founded upon the soundest principles, and I have employed it, as will be seen, with the most decided success. The proportions in which I have been in the habit of directing gin and water to be used, are one part of the former to four or five parts of the latter, and the gin should be Dutch, not English. It is scarcely necessary to say, that I have selected this kind of spirituous liquor on account of its well-known diuretic properties. If a case be so far advanced that the cavity of the pleura is filled, or nearly so, with serous fluid, and if the patient be evidently dying from difficulty of breathing, yet not comatose or paralysed, are there any means of immediately relieving the difficulty of breathing, so as to enable us to give him a chance for his life? I cannot answer this question from experience, but it appears to me to be a case, particularly if the patient be young and has been previously healthy, in which we would be justified in instantly having recourse to paracentesis, which may be performed by a common lancet, if we should, at the time, not happen to have a better instrument. While the fluid is issuing from the chest, the patient should be given warm wine and water, and every restorative means should be employed; and, when a quantity sufficient to relieve his breathing has been drawn off, the wound should

then be carefully closed with adhesive straps. This being done, and the restorative plan being continued, it is probable that absorption will go on, and enable us, in a few hours, to find a vein from which we should take blood in a quantity proportioned to the patient's strength, from a small orifice, and in the recumbent posture. Having thus reduced the case to the state of an ordinary one, we may then treat it as such, until, perhaps, success shall have, at length, crowned our efforts to snatch a victim from the very mouth of the grave.

The next curative indication is obviously to support the patient by animal food, and the occasional use of gin and water, in order to enable him to bear not only these repeated bleedings, but also the debilitating effects of the disease. The only exception to this rule is, perhaps, the case of a young strong person, in whom an attack of inflammation of the lungs has just terminated in serous effusion. In such a case, it will be advisable to withhold both animal food and spirituous drinks for two or three days, but beyond this time, if not before, the state of the patient will not, even in this case, fail to evince the necessity of giving both.

The other curative indications are, first, to free the bowels, if confined, with compound powder of jalap, or, if their secretions and discharges be unhealthy, with calomel or blue pill; secondly, to assist the action of the kidneys by diuretics; thirdly, if the disease has arisen from hepatization of the lung or lungs, to administer blue pill in combination with diuretic powders, as this combination often acts upon the mouth as well as the kidneys, and, by doing so, causes absorption of the coagulable lymph deposited in the cellular tissue of the lungs; fourthly, should more or less of hepatization remain after the dropsy has been removed, to employ a mild mercurial course until all dulness has disappeared, and the natural respiration is again heard all over the chest; fifthly, when the disease has been completely removed, to advise generous diet, tonics, and change of air.

Such is the treatment which I recommend in hydrothorax, and also with a few obvious modifications in anasarca, and I

shall now proceed to show that it is one which I have successfully employed for nearly twenty years.

CASE I.—James Wilson, a sailor, aged 55, a small but stoutly made man, was carried, on the 10th of January, 1823, into the Charitable Infirmary, Jervis-street, of which I was then one of the surgeons, and placed under my care. His difficulty of breathing was such that he appeared to be at his last gasp; so much so, indeed, that my first step was to order all the doors and windows of the ward to be opened, and spirit of ammonia to be held under his nose. His face, neck, wrists, and backs of the hands, and lower extremities were œdematous and greatly swollen. His lips were of a dark purple colour, the action of the heart was rapid and irregular, and the pulse quick, soft, compressible, and intermitting. On succussion, the sound of fluid dashing within the chest was heard distinctly on the left side, but not on the right. The heart was displaced, and felt pulsating at the right side of the sternum. His bowels were constipated, and he had not passed a drop of urine for the last twelve hours. On being placed in bed, he refused to lie on his back, or on either side, and said he would be smothered if he did not sit up. I did not employ either percussion or the stethoscope, for both were, at this time, very imperfectly known, and scarcely ever used in this city. It appeared that he had always enjoyed excellent health until about six days previous to his admission into hospital, when, while at sea, and after being exposed for some days to severe cold and wet, he felt a sense of oppression and tightness about his chest, which gradually increased, and was followed by swelling of his feet and ankles, and an evident decrease in the quantity of urine.

As soon as the patient had somewhat recovered from the excessive distress occasioned by his removal from his ship to the hospital, I ordered him to be bled from the arm, and, perceiving that he bore the bleeding well, twelve ounces of blood were taken away. Immediately after, he expressed himself as feeling greatly relieved, and lay down on his back, supported by two or three pillows. He was then directed to have fifteen

grains of powder of jalap every hour until his bowels were moved. After standing for an hour, the blood showed no tendency either to buffing or cupping. I saw him again at eight o'clock in the evening, and found that after taking three of the powders, his bowels had been freely moved, and that he had passed about half a pint of high-coloured urine. His breathing was still more relieved; his lips were nearly of their natural colour; the action of the heart was more calm and less irregular; the pulse quick, but no longer intermitting or so compressible, and the œdematous swelling of the face, neck, wrists, hands, and lower extremities was obviously lessened. During the night he slept, or rather dozed, for a few minutes at a time; passed more dark-coloured urine, and had several fluid evacuations from his bowels. On the following morning he was better in every respect, and did not complain of weakness, and he was again ordered to be bled, but as he complained of weakness, when about nine or ten ounces were taken, his arm was tied up, and he was directed to have some bread and tea, and strong broths during the day, to take occasionally a wine glass full of gin and water, one part of the former to four of the latter, and to have the following medicines as prescribed:

℞ Pilulæ Hydrargyri grana octodecem.

Pulveris Digitalis,

—— Scillæ, sing. grana sex.

M. et divide in pilulas sex æquales, quarum sumat unam tertiis horis.

℞ Infusi Juniperi,

—— Scoparii, sing. uncias tres.

Spiritus Juniper. Compositi unciam.

Syrupi Scillæ Maritimæ drachmas sex.

M. Sumat hujusce misturæ cochlearia duo ampla post singulam pilulam.

I visited him that night at a late hour, and was quite struck with the freedom of his breathing, the ease with which he could lie upon his back or on either side, the quantity of urine which

he had passed, the great diminution of the dropsical swelling of the face, lower extremities, and other parts, and, in short, with the surprising alteration for the better, in every respect, which had taken place in such a short time. He slept soundly that night. From this period he was allowed to have solid animal food, his gin and water and medicines were continued, and on the twelfth day from his admission, he was able to return to his vessel and resume his duties.

This case was seen on the second day by the senior physician to the hospital, the late Dr. Brooke, and also, I believe, by the junior, Dr. Thomas Lee, now in Van Diemen's Land; but I have no doubt that it will be at once recognized by Mr. John Mac Dermot, who, about that time, acted as surgeon-apothecary to the institution, and is now a surgeon in the Royal Navy.

CASE II.—In May, 1823, Master Jeremiah M'Kenna, a strong, healthy boy, aged 13, and residing at No. 16, South William-street, in this city, was attacked with scarlatina, for which he was successfully treated by Professor ———, a physician of long standing and high character. In about eight or ten days after the boy was supposed to be recovered from the disease, he was observed to swell. His physician ordered his body to be swathed with flannel, a fire to be put in his room, and wine, chicken, and broths to be given. He also prescribed a quantity of medicine, but of what nature I could not learn. Under this treatment, the disease, instead of receding, advanced, and, in about a fortnight, arrived at such an alarming height as to induce the Professor to inform the family that the case had become, in his opinion, perfectly hopeless, and that, as the boy had but a few hours to live, they should instantly call in the late Dr. Cheyne. Accordingly, that justly celebrated physician was sent for, and attended promptly. After seeing the case, he also declared it to be hopeless, refused either to prescribe or take a fee, and withdrew. The family now completely despaired of the boy, but at the urgent request of his uncle, I was sent for in the greatest haste, and lost no time in

attending. When I saw the patient he was sitting up in bed, and doubled forwards, that being the only position in which, as he said, he could breathe, or which he was able to assume for two days before. His face, neck, trunk, lower extremities, and hands, were greatly swollen and cedematous. His lips were of a dark purple colour, and the wings of his nose were in rapid motion. His pulse was full, soft, compressible, and intermitting, and the action of the heart tumultuous and irregular. His breathing could scarcely be more difficult than it was, and, on succussion, the sound of a large quantity of fluid splashing within both cavities of the chest was distinctly audible, not only to me, but to several persons standing round his bed. What the other physical signs were I cannot state, as, for the reasons stated in the former case, I did not employ either the stethoscope or percussion. The abdomen was much distended, and evidently contained a large quantity of fluid. On inquiry, also, I found that he had passed no urine on that day, and not more than two ounces of a high colour during the two previous days; in fact, there was total suppression of urine.

Such being the case which I was called upon to treat, I could not conceal from myself that it was a very formidable one, yet the youth and previous strength of the patient, and the circumstance of bleeding not having been employed, induced me to entertain some hope of success. Accordingly, my first step was to request a consultation with Professor —. That gentleman, however, refused to attend, on the plea of other business, requested that I might do what I pleased, and, on being informed that the only question asked by me referred to bleeding, he said that the boy might die in the very act of being bled. Being now left alone and unassisted, I sent for the family apothecary, the late Mr. Justin Kearney, than whom few men were more generally respected and esteemed, and informed the family, in his presence, that I entertained some hopes of recovering the boy by bleeding, but that I could not hold myself responsible for the consequences which might attend such a mode of treatment.

The answer was, that the only remaining chance for life should be given. Without further loss of time, therefore, I proceeded to take blood from his arm, and finding that he did not become weak, allowed it to flow until ten ounces were taken. When about half of this quantity had been drawn, he exclaimed, "Doctor, you have saved my life," and when his arm was tied up, he was able to lie down with comparatively great ease. The blood drawn was not either buffed or cupped. He was now ordered to have fifteen grains of compound powder of jalap every hour, until his bowels should be freely moved, and afterwards to be given a moderate sized cup of chicken broth. At this time it was about eleven o'clock in the forenoon. At eight o'clock in the evening, I saw him again, and found that his bowels had been freely moved, and that he had passed more than a pint of high-coloured, lateritious urine: his breathing was now greatly relieved, his pulse, though quick, was firmer, and no longer intermitted, the action of the heart was much less violent and more regular, and the swelling and œdema were every where greatly reduced. Finding that he did not complain of weakness, and that his pulse was so firm, I bled him again to six ounces, and ordered the compound powder of jalap to be continued. During the night he slept occasionally for about half an hour at a time, had some watery discharges from his bowels, and passed more urine and of a clearer colour. On the following morning I found him still more improved in every respect, and the blood last drawn free from buffing or cupping. As his strength, and the firmness of his pulse, seemed rather increased than diminished, I bled him again to six ounces, and directed the same powder to be taken. In a few hours after he had several watery evacuations from his bowels, which seemed to distress him very much; and, for the first time, he complained of weakness, and asked for animal food, which he was allowed to have, and also some weak gin and water occasionally. The use of the compound powder of jalap was now discontinued, and he was directed to be kept as quiet as possi-

ble. He slept soundly throughout nearly the whole of that night, and frequently passed considerable quantities of clear urine, and on the next day he was so well that I had merely to order his animal food and the gin and water to be continued. From this period all the symptoms began rapidly to retire, and on the tenth day from my first visit he was in perfect health, and enabled to go out and pursue his studies. The patient is now a solicitor practising in the town of Monaghan, and his mother and family are now resident in Dublin, and can vouch for the facts which I have stated. The case made some noise at the time, and may still be recollected by some of the older practitioners of this city.

CASE III.—Mrs. O.—— of J——n House, county of L., seventy-two years of age, and upwards, enjoyed uninterrupted good health, until the spring of 1824, when, without being exposed to cold, or being able to assign any cause, she felt her breathing gradually becoming difficult, and a sense of oppression about her chest. She observed, at the same time, that her feet began to swell, and that she passed much less urine than usual. Finding that these symptoms increased, she came to Dublin, a distance of eighty miles, by easy stages, and placed herself under the care of a physician, who was then, and is now, in very respectable practice. This gentleman employed diuretics, purgatives, and other means, but the disease advanced, until the son of the lady became alarmed, and requested me to meet her physician in consultation. When we met, she was dressed, sitting upon a sofa, and supported by several large pillows placed at her back. She evidently breathed with very considerable difficulty; her lips were of a purplish colour; her face, wrists, and lower extremities were considerably swollen, and dropsical; the action of the heart was quick, and irregular; the pulse quick, soft, and intermitting; and on inquiry, she stated, that she had not passed half a pint of urine for the 24 hours previous; that she could not lie down at night, without having herself supported by five or six large pillows, and that she had little or no

sleep, but rather a kind of dozing. On succussion, there was an indistinct sound of fluid, in the chest ; but, for the reasons already stated, neither of us employed either the stethoscope or percussion. We agreed, however, that the case was one of hydrothorax, and I proposed the use of small and repeated bleedings. This proposal was objected to by Dr. ———, who said, " I know that the plan has recently succeeded with you in the case of a young, strong boy, but you can scarcely expect me to consent to its adoption in the case of a lady so old as our patient." But a short explanation of my views and practice induced him to withdraw his opposition, on the condition that the patient should be bled by myself, and supported by gin and water, or wine largely diluted with water. The lady was then informed of the steps necessary to be pursued, and she exclaimed, in great surprise, " Gentlemen, light and darkness are not more opposite ; it is absolutely knocking me down with one hand, and raising me up with the other ;" but she submitted, and merely requested the bleeding to be deferred to the following morning. We complied with her request ; and I waited upon her at the appointed time. She was in bed, and supported by five large pillows. I took away more than ten ounces of blood from her arm, without causing weakness, and with such great relief to her breathing, that she was enabled to lie on her back with ease, and dispense with three of her pillows. She was now advised, as agreed upon by Dr. ———, to remain in bed, to have bread and tea, as usual, for breakfast, chicken broth, and gin and water occasionally during the day, and to take some diuretic pills, and a diuretic mixture, which were precisely the same as those prescribed in the first of these cases. Dr. ——— and I saw her in the evening, and found her so much improved in every respect, that we merely continued the treatment, and fixed upon seeing her again in two days. At the end of that time, the puffing of the face, and swelling of the lower extremities, had greatly subsided, and she had slept much better, but her breathing was not as free, nor the secretion of

urine as abundant, as we wished, and we agreed upon again bleeding to six ounces, and continuing the rest of the treatment until our next visit, which was also postponed for two days. I bled her accordingly, and the blood, as was the case with respect to that first drawn, presented no appearance of either buffing or cupping. This bleeding, however, was found, at the appointed time, to have but partially attained our objects, and another to the same extent was ordered, still continuing the rest of the treatment, with the addition of such solid animal food as she preferred. From this period, she recovered rapidly, and, in the course of two or three weeks, regained her former health and strength. In two or three months afterwards, she returned home, and remained there until the summer of 1826, when she became again attacked with the same difficulty of breathing, and perceived the same diminution in the secretion of urine, and the same kind of swelling in her feet. On this occasion, however, she undertook to treat herself, and sent privately for a neighbouring apothecary, whom she induced, after much difficulty, to take at once a large quantity of blood from her arm. She felt relieved for the moment, but such weakness and exhaustion quickly succeeded, as to require the free use of wine, and other restoratives. Being, however, a woman of strong mind, she became immediately sensible of the great mistake which she had committed, and, as soon as her strength permitted, travelled by easy stages to this city, and again came under my care. I advised generous living, sea air, the society of cheerful friends, tonics of various kinds, and she soon returned home in a very good state of health. In 1829, she retired to a convent near this city, was there attacked with her old complaint, for which she was attended by some other physician, and died in the 78th year of her age.

CASE IV.—About the middle of November, 1838, T. G. D——, Esq., aged 67, and residing in Upper Rutland-street, in this city, became affected with influenza, which he treated for some weeks as a common cold, until the first week in December

following, when he sent for me. Finding him very weak, and harassed with cough, I ordered him wine, animal food, pills composed of equal parts of gum ammoniac and carbonate of ammonia (silvered, and kept in a closely stopped phial), camphor mixture, with carbonate of ammonia, and other stimulating medicines. Under this treatment, he improved, but so slowly, that a consultation was held, and he was recommended change of air, removal to some distance from the city, and while there to continue the same plan of treatment. Accordingly, about the 20th of December, he removed to spacious apartments in a very healthy situation close to Rathmines, and nearly three miles from town. Here he improved rapidly, lost his cough, and regained his former strength, when, about the 5th of January, 1839, he imprudently took a long drive in his carriage, on a very cold day, and on returning to his apartments in the evening, was seized with rigor, cough, severe pain under the right nipple, sense of oppression and tightness about the chest, and increase of pain on coughing, or making a deep inspiration. In this state, he went to bed, took warm barley water and whey, bathed his feet in water as hot as he could bear, covered himself with additional blankets, and used the usual means of provoking perspiration, but without effect. During the night, the pain and oppression gradually increased, and became very severe about seven o'clock on the following morning, when all pain suddenly ceased, and he found himself considerably relieved. This relief, however, was but of short duration, for before an hour elapsed, he perceived, that his breathing became difficult, and his face somewhat swollen. I was immediately sent for, attended, and received the foregoing account of the attack. He also informed me, that he had not passed more than half a pint of high-coloured urine since the attack. His face and ankles were slightly puffed and oedematous; the action of the heart was accelerated, and his pulse quick and soft. On examining his chest, I found, on the right side, evident dulness, and complete absence of any respiratory sound from about the eight rib downwards. He was

then placed on his left side, when he immediately complained of increased difficulty in breathing, and on percussing the lower part of the right side of the chest, that part no longer sounded dull, but hollow. Seeing that the effusion was not considerable, and having reasons for acting with every circumspection, I informed the patient of the nature of his complaint, and urged the necessity of a consultation. My request was complied with, and one of the most eminent physicians in this city was agreed upon. In the interim, and as I could not expect a meeting with that gentlemen until the following day, I prescribed my favourite diuretic pills and mixture. In the afternoon of the next day, I had the pleasure of meeting my friend, Dr. ———. When we arrived, we found that the diuretic medicines had acted but very feebly, and that the disease had considerably advanced: the face, hands, feet, legs, and thighs, were swollen and dropsical; the lips were of a dark colour; his pulse was quick, soft, and intermitting; he was annoyed with cough, and expectorated sero-mucous matter; the dulness and absence of respiratory sound had extended to the fifth rib; the heart was situated higher up, and more to the left than usual; respiration was puerile in the two upper thirds of the left lung, but no sound could be heard in its lower third; he could not lie on his left side for more than a second; percussion of the right side of the chest, while in this position, elicited a hollow sound; and, on succussion, the sound of a large quantity of water splashing within the right side of the chest could not be mistaken.

After seeing and carefully examining this case, Dr. ——— and I retired to consult upon it, and when I mentioned to him the treatment which had been employed, he said that he knew of none better, and declared it to be his conviction, that it was utterly idle to expect any success in such a case, particularly on account of the patient's advanced age. He also felt it to be his duty to make the friends of the patient acquainted with the very unfavourable opinion which he entertained of their relative. The diuretic medicines were, therefore, ordered to be continued. This consultation occurred on a Sunday. Early on the following

Monday, I found that the diuretics had produced scarcely any effect, and that all the symptoms were so aggravated that my patient seemed to be in the most imminent danger ; and I at once determined on having recourse to a more energetic plan. Having sent for one of my former pupils, Dr. Thomas Mac Grath, who resided in the neighbourhood, and who is now serving as an assistant-surgeon with his regiment, the 22nd, in India, I requested him to bleed the patient to eight ounces, from a small orifice, as much as possible in the recumbent posture, and, while the blood flowed, to give him as much gin and water, or wine and water as he might find necessary to support his strength. I also requested my young friend to visit the gentleman frequently during the day and night, and see that the diuretic medicines were regularly administered. On Tuesday morning, his breathing was much less difficult, and his face less puffed; the œdema had disappeared from the thighs, and was much reduced in the feet and legs; the pulse no longer intermitted; and the action of the heart, although quick, ceased to be irregular; the fluid in the chest was considerably diminished in quantity, for vesicular respiration was heard as low down as the eighth right rib, and there was no dulness except from that point downwards; he had passed nearly three pints of urine, of which the last portion was of a clear orange colour, and he remarked to me that he began to pass water in a very short time after the bleeding. I directed his gin and water, medicines, and diet to be continued. On Wednesday, he was still better, except that he had not passed as much urine as before, and I ordered him to be bled to six ounces, and continue the rest of the treatment.

On Thursday, I found him much improved in every respect, and that he had, for the first time since the attack, enjoyed some sleep during the previous night. He had now slight ptyalism. I merely desired his medicines, gin and water, and diet to be continued. On Friday, there was also some general amendment, but not such as to satisfy me, and I directed him to be again bled to six ounces, and to continue the rest of the treatment. On Saturday, at 4 o'clock in the afternoon, he informed me that he

had slept soundly for the whole of the night before, and that, with the exception of being weak, he felt himself perfectly well. Such proved to be the fact, for every vestige of swelling and œdema had disappeared from the face, legs, and feet; there was not the least dyspnœa; the whole of the right side of the chest sounded perfectly clear; the vesicular murmur was heard all over the right lung; the action of the heart, and his pulse were natural, he passed urine freely, and, in short, he had not a single symptom of the disease. Wishing very much that Dr. ——— should see the great change which had taken place in one week, in order that he might be induced to adopt the practice, I requested a consultation with that eminent gentleman on the following day, Sunday; representing, at the same time, that there were some points upon which it would be desirable to have his opinion. My request was willingly complied with, and we met accordingly. After retiring to consult, he expressed his great surprise at the altered state of the patient, and, on hearing the treatment pursued and some of the principles upon which it proceeded, approved highly of both. We recommended generous diet, tonics, and further residence in the country. At the end of a fortnight, this gentleman returned in perfect health to his house in Rutland-street, and is now alive and well, at his seat in the county of Roscommon.

CASE V.—John King, aged 36, tall, pale, and hepatic looking, admitted into the Richmond Surgical Hospital, on the 20th of March, 1841, with hydro-sarcocele of the right testis. As a private of the 31st regiment, this man served fifteen years in India, where, and also on his homeward passage, he had frequent attacks of pneumonia, disease of the liver, and dysentery; and after admission into the above-named hospital, there were the cicatrices of scarifications at different parts of the front of the chest, and innumerable marks of leech bites on the front of the chest and abdomen. About nine o'clock on the morning of the 8th of June following, and while under treatment for the hydro-sarcocele,

he was suddenly seized with rigor, oppression and pain in the chest, severe stitch under the left nipple, and dry cough. He was immediately attended to by the resident pupil of the hospital, who found his pulse quick, and detected fine crepitation in the left lung. He proceeded at once to bleed him, but before nine or ten ounces of blood had been taken, the patient became so excessively weak that the arm was tied up. I arrived soon after, and finding that the crepitating râle, quick pulse, dry cough, pain, and oppression, still continued, ordered nauseating doses of tartarized antimony, and leeching, followed by cupping, over the seat of the pleuritic stitch ; and, his bowels being confined, the gum-elastic-rectum tube to be introduced, and, through it, an emollient enema to be administered. On the morning of the 9th, the sputa were tawney and rust-coloured, and the symptoms but little moderated. The antimonial solution, leeching, and cupping, were repeated ; the leech bites were directed to be covered with adhesive plaster, and a large blister to be applied across the sternum and left side of the chest. Except the gradual disappearance of the tawney, rust-coloured sputa, and their being replaced by mucous expectoration, no very appreciable change occurred until about six o'clock in the morning of the 13th, when the resident pupil was again sent for. On seeing him, the patient stated that, about two hours before, all pain in the chest and side had left him, and that he then felt relieved, but that, soon after, he began to feel more and more oppressed about the chest. The young gentleman, suspecting what had occurred, refused to act until my arrival. I saw the patient at nine o'clock, and found him lying partly upon his back, and partly upon his left side, or in other words, obliquely to the left. His pulse was quick, full, soft, intermitting, and very compressible, and the action of the heart much accelerated and quite irregular ; his face and ankles were slightly puffed and œdematous ; the difficulty of breathing was evidently much increased ; and, on percussing the left side of the chest, the sound was quite dull from the lowermost part to the ninth or eight left rib ; and, for this extent,

no respiratory sound could be heard. Placing him on the right side caused great additional difficulty of breathing, and, while in this position, percussion of the left side elicited every where a moderately clear sound. On succussion, no very distinct sound of fluid agitated within the chest could be heard. The urine passed for many hours was high-coloured, and did not exceed two ounces, and he was very weak. Taking into consideration the previous history of this man, and the great impression made upon his system by the first small bleeding, and then coupling these with the weakness and generally unfavourable appearance which he now exhibited, I was afraid to venture upon bleeding, and directed him to have the diuretic pills and mixture so often referred to. On the 14th, the dulness and the absence of respiratory sound, were found as high as the fourth left rib ; the heart was displaced, and felt pulsating at the right side of the sternum ; succussion gave the distinct sound of fluid dashing within the right side of the chest ; the feet, legs, and lower half of the thighs were swollen, and pitted on pressure ; he had passed scarcely any urine ; and the difficulty of breathing and other symptoms were considerably aggravated. It now became clear that I should either let the man die, or have recourse to bleeding. Accordingly, I ordered him to be bled to eight ounces, from a small orifice, and in the recumbent posture ; and while the blood was flowing, to give him frequently a wine glassful of gin and water, in the proportion of one part of the former to three of the latter. This being done, no weakness ensued, and the effect upon the dyspnoea, the action of the heart, and the pulse, was very satisfactory, and soon evident. He was then directed to continue his pills and mixture, to have small quantities of strong broths, and gin and water every third hour. The blood was very slightly buffed. Under this plan, he continued to improve until the morning of the 17th, when the amendment ceased, in some degree, to be progressive, and he was again ordered to be bled, as before, but not to more than six ounces ; and to continue the rest of the treatment. After this bleeding, his pro-

gress to recovery was rapid, until the 20th, when the same reason made it necessary to repeat the venesection, and four ounces of blood were taken away. The blood was neither buffed nor cupped. From this period, still continuing the other part of the plan, nearly all the symptoms gradually retired; but the heart continued displaced, and at the right side of the sternum; and, although vesicular respiration was heard all over the anterior portion of the left lung, the lateral and posterior portions sounded dull, and gave unequivocal evidence both of bronchial respiration and bronchophony. He was now ordered solid animal food, and to proceed as before. On the 25th, the diuretic medicines were discontinued, and he was desired to take the following pills as directed.

℞ Calomelanos grana octodecem.

Opii puri grana tria.

Conservæ Rosæ grana duodecem.

M. et divide in pilulas duodecem æquales. Harum sumat quotidie unam mane, meridie, nocteque.

On the 29th his mouth was moderately affected, and the physical signs showed that the hepatization had diminished in extent. On the 5th of July, his mouth was well, and he was ordered light tonics, and permitted to walk in the grounds at the rear of the hospital. On the 27th, the heart still remained displaced, and at the right side of the sternum; and the hepatization of the lateral and posterior portions of the left lung still continued to a considerable extent. He was now advised to go to the country, and discharged from hospital.

In three months after his discharge, I saw him, and examined his chest. The heart was in the natural situation, and its action quite normal; and he said that this organ did not return to its proper position for more than two months after he left the hospital. On examining the left lung, also, I was much gratified on finding clear vesicular respiration throughout its whole extent. He now resides in this city, and I saw him again in improved health and appearance, on the 12th of October, 1842.

The case was observed with great interest by Mr. Carmichael, and Drs. Hutton, Adams, and Macdonnell, and also by a large class of students.

CASE VI.—R. B. Esq., of Lower Gardiner-street, aged 66, and, from his earliest years, very slightly affected with asthma, and bronchitis, had, during the last eight years, about four or five attacks of oppression, and difficulty of breathing, which came on slowly, and were accompanied by slight puffing of the face; swelling of the ankles, feet, and legs; diminished secretion of urine, strong action of the heart, and quick, soft, intermitting pulse. Some of these attacks came on in winter or spring, others in summer or autumn, and generally without exposure to cold, or any other assignable cause, except a full, plethoric habit. I attended him in all these attacks, and with the exception of the first, which was of an inflammatory nature, they all quickly yielded to one small bleeding, purgatives, and diuretics. Being one of my oldest and most valued friends, I saw him almost daily, and, about last May, perceived that one of his old attacks was coming on. I advised him to arrest its further progress by bleeding, but he would not consent to my proposal either then or frequently after. The disease gradually advanced, and, at length, I was sent for on the 18th of last July. His breathing was very much oppressed, but he had no pain in the chest, his pulse was quick, soft, and intermitting; his face and ankles were moderately puffed and swollen; he had not passed more than a few ounces of dark-coloured, lateritious urine, since the night before; as usual, his chest sounded tympanitic, and the respiratory sounds were loud, and noisy. I ordered him to be immediately bled to eight ounces, and afterwards to have a fetid enema, with turpentine. He was bled, soon after, by his neighbour, Mr. Akinson, surgeon-apothecary. In about eight hours after, I saw him again, when he was greatly relieved, and informed me that he began to pass urine freely in a very short time after he was bled; and he had, at the time of my visit, passed more than a pint and a half of a clearer colour, and

less lateritious. His bowels, also, had been freely moved. Seeing that his kidneys were acting so well, I ordered no diuretic, or other medicine; neither did I order him gin and water, as usual, for he was not in the least weakened. On the following day, all difficulty of breathing and œdema had disappeared, there was very little intermission of the pulse; the kidneys had acted, and continued to act, in a satisfactory degree; and again no medicine was ordered. In two or three days after he was very well, and able to set out on a visit to his friends in Ulster.

The foregoing cases are selected from some others, and faithfully represent the powerful effects of small and repeated bleedings in the treatment of hydrothorax and œdema of the lungs, particularly in restoring the heart, absorbent system, and kidneys, to their healthy functions.

I should now proceed to detail cases of anasarca successfully treated by the same means, but as that disease is really but a mild form of hydrothorax, and as almost all the cases of it that I have met, yielded readily to a single bleeding, with diuretics and purgatives, I consider that the detail of such cases would but uselessly occupy the time of the reader. But I shall take the liberty of directing his attention to some facts respecting the use of venesection in dropsy, which may enable him to see at once the precise difference between my treatment of the disease, and that hitherto recommended and employed. Venesection is recommended by Hippocrates, and many ancient and modern authors; and about the middle of the sixth century, Alexander Tralles, or Trallian, advocated it *per exiguas missiones*, and his successors, down to Maclean, Blackall, and still later writers on the subject, have adopted the improvement. There is nothing new, therefore, in the treatment of the disease by small and repeated bleedings. But it will be found that, without any exception, all of them have restricted venesection by so many conditions respecting the age, strength, and temperament of the patient; the organ affected; the state of the pulse and respiration; the urine being or not being albuminous; the origin of the

disease from inflammation, or from the suppression of either natural or accustomed discharges; the occurrence of hæmoptysis; and a great variety of other points, that the use of this valuable remedial means really constituted the exception, not the rule. In fact, it was, and now is, so very conditional, that many have been deterred from having recourse to it in any case. Again, even the modern works on the subject exhibit the clearest admissions of the great difficulty to be encountered in steering a safe course between, on the one hand, the obvious necessity for counteracting the tendency to debility, and, on the other, the danger of exasperating a diathesis supposed to be inflammatory. But, now that the practitioner has before him views which avoid the extreme of both doctrines; now that he is supplied with a set of clear and simple rules to direct him in bleeding; now that he sees and must be convinced that he can not only support, but stimulate the patient with the greatest advantage, and without any risk; it is to be hoped that he will, sooner or later, surrender his prejudices against the use of the lancet, and adopt a practice which will not, I venture to assert, fail to answer all his reasonable expectations.

In conclusion, it is impossible for the reader to be more sensible of the numerous faults, both of omission and commission, with which this communication is chargeable, than I am. I could even point them out. But if the principles and practice which I advocate are sound, they will be taken up by some more competent person, who will, no doubt, correct the errors and supply the defects to which I allude, and no one will see that duty strictly performed with more real pleasure than myself.

## BIBLIOGRAPHIC NOTICES.

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*A Bedside Manual of Physical Diagnosis.* By CHARLES COWAN, M. D.

THIS is a second edition, revised and enlarged, of a little work which has been favourably received by the Profession, and we think deservedly so. It is not an "Auscultation made easy," professing to teach, in eighty small pages, what has occupied the labours of so many distinguished writers, but is simply and honestly what it pretends to be—"a summary of the best established signs for the diagnosis of disease, supposing a previous acquaintance with their individual value and interpretation, as well as with the nature and application of the means best adapted for their detection." Such a work, well executed, could not fail to be useful, not only to the student, but to many practitioners, whose opportunities of seeing disease are not sufficient to keep up that familiar acquaintance with its signs, which alone can make diagnosis at once an easy and a certain science. It is, however, no book for the beginner—no good could possibly arise to the student from taking such a manual as this as his *guide to the study of disease*, and the great evil of such books is, that let the writers disavow this design as they may, and even caution their younger readers against the error, it is constantly committed; and it is and will be the aim of numerous students of a *certain class*, to find the shortest, and as they imagine, the easiest road possible to the attainment of a *certain amount* of knowledge of the stethoscope, and of every thing else.

The following may be taken as a favourable specimen of the style and matter of the book:

"*PHTHISIS.—SECOND PERIOD. Tubercular deposit more abundant.—Exterior.*—The movements of the chest are more evidently impeded under one or both clavicles, and the flattening is more decided.

"*Percussion.*—The dulness is more pronounced, and the resist-

ance to the finger greater. The sonority is not modified by a deep inspiration.

"*Auscultation.*—The *inspiration* is now more or less tubular and blowing, often mixed with vesicular sounds. The *expiration* is louder, more superficial, and longer; almost a repetition of the inspiration. The resonance of the voice and cough is augmented, and the cardiac sounds are increasingly audible. The remainder of the same lung is healthy, or we discover puerile respiration, and over the apex of the other side we can often detect the indications of early miliary deposit.

"**THIRD PERIOD.—SOFTENING.—***Auscultation.*—In addition to the preceding signs, auscultation reveals a more or less abundant small crepitation over some portion of the apex, decreasing from above downwards, and most distinct during or after the cough, or at the close of a deep inspiration. As the destruction of the lung advances, the bubbles increase in size and liquidity, are less limited to the inspiration, and, by a variety of clicking, gurgling, and plashing sounds, indicate the augmenting spaces in which they are produced. Coincident with the last changes, the bronchial respiration becomes cavernous, tracheal, or amphoric. The voice and cough are successively bronchial and pectoriliqueous. As the excavation advances, the intercostal spaces appear depressed and the affected region sunk inwards. The percussion may also become gradually clearer and even tympanitic over a large empty cavity.

"*Remarks.*—It is most important to remember, that tubercles are first deposited, with few exceptions, in the *superior and posterior portions* of the lung, decreasing *from above downwards*; that one lung is in general first affected, and the disease is seldom at any period equally advanced in both. The physical signs are of course developed successively from the apex to the base, which is the inverse of bronchitis, pneumonia, and pleurisy; and accuracy of diagnosis is to a great extent dependant on our knowledge of these facts.

"We are particularly anxious to direct the student's attention to the examination of the *posterior* portion of the apex, where deposit can be frequently detected before any appreciable changes are heard under the clavicle. For this purpose the patient's arms must be well crossed, the head inclined forwards, and the muscles relaxed. The finger must be *firmly* applied in different positions between the spinous processes and the superior angle of the scapula, and percussion made with varying degrees of force, accurately comparing corresponding points on both sides. The sounds are never equally clear with those elicited under the clavicles, but to a practised ear they are not less distinctive, and as we have said, often furnish the most decided and early indications of tubercular deposit. Auscultation is equally available with percussion over the same region, and the results are most valuable. Reiterated experience has satisfied us of the truth of the above statement, and we believe a frequent reason why phthisis is not detected in its earlier stage, has arisen from observers almost exclusively examining the subclavicular regions.

"Bronchial rales of any kind limited to the upper portions of one or both lungs are almost pathognomonic of tubercles.

"The presence of emphysema in the upper lobes may obscure some of the physical signs, but an attentive comparative examination, either before or behind, will seldom fail to determine the real nature of the case.

"The diagnosis of early tubercular deposit is one of the most difficult and most valuable applications of physical diagnosis.

"Lastly, let the student never forget that pulmonary consumption is no more than a fragment of a great constitutional malady, which it would be in vain to think of measuring by the stethoscope, and which it belongs to a higher discipline than any mere skill in auscultation rightly to comprehend."

With the omission of *interrupted respiration*, and that of quivering of the muscular fibre on percussion observed over the seat of softened tubercle, the above extract comprises, we think, a full and complete as well as a concise account of the physical signs of tubercle. The author puts forth prominently those most worthy of the student's regard, and we fully concur in the importance he attaches to the examination of the *posterior* apex of the chest, the study of the *expiration*, and the sensation of *resistance* communicated to the finger on percussion. This last is a subject of study for all who would obtain the aid which careful percussion is capable of affording to diagnosis, which is by no means confined to the mere *sound* elicited. We observe that Dr. Cowan repeatedly notices this resistance. Thus, on chronic pleurisy, or empyema, he says—"Percussion: the sound is universally dull, or if clear, is only so around the apex of the chest, or the root of the lung. The resistance to the finger is *not extreme*."

We remember once hearing, with some surprise, an eminent surgeon assign as a reason for not operating upon a case of supposed empyema (in which every physical sign was present, including considerable dilatation of the side, and displacement of the heart), that the dulness on percussion was too great for fluid. On dissection, the disease was found to be, not empyema, but extensive cancerous degeneration of the lung. Here of course, it was the dead, inert feel of the side, and its total want of *vibration* when struck, that gave him a sensation unlike what he had remarked in cases of fluid, and not the difference of sound.

In the section on pneumothorax, the author is at pains to make out a differential diagnosis between this disease and emphysema, while he omits all mention of the more important and common one between it and a large cavity. He however, mentions a physical sign of pneumothorax, which may be added to the eight differences specified by Dr. Stokes. It is the absence

of vocal vibrations. No trace of such can be felt, as we have had some recent opportunities of remarking, in cases of sudden supervention of pneumothorax during the progress of phthisis.

We were disappointed with the section on pericarditis. That most difficult differential diagnosis between effusion of lymph, and valvular disease, is thus disposed of:

"To distinguish these phenomena [of effused lymph] from the consequences of valvular disease, the student must pay attention to the following particulars:—In pericarditis, the sounds are superficial, less fixed, less accurately coinciding with one or both sounds of the heart, are not propagated up the larger vessels, and the transformations are more rapid than in valvular disease. The gradual cessation of the rubbing sounds indicates either absorption of lymph, the formation of adhesions, or the effusion of fluid."

He passes altogether unnoticed the order (almost invariable) in which the changes of signs in pericarditis occur, and as he particularizes in a former passage, the neighbourhood of the nipple, or heart's apex, as the seat of special intensity of the friction sound, the student will not anticipate that upon adhesion taking place, or fluid becoming effused, it is over the sternum, or region of the base of the heart *alone*, that he will detect this phenomenon.

The following is an excellent diagnosis of a lesion difficult to detect—"chronic adhesion of the pericardium:"

"Another valuable sign is the want of mobility. In a healthy person sitting erect, the apex strikes two inches below the nipple, and about one inch from the sternum. If lying on the left side, the apex is vertical with the nipple; if on the right side, it strikes in a line with the edge of the sternum. In adherent pericardium *this mobility is lost.*"

All his observations upon diseases of the heart and large vessels, are excellent, as also are those on the physical signs of diseases of the abdomen, &c. Take for instance, those on

"*Deposit of false Membrane on the Peritoneum.*—The sound and sensation closely resemble what we hear and feel when we squeeze or bend a piece of new leather. To detect it, the stethoscope is to be applied over the suspected part of the abdomen, while at the same time, the parietes are pressed with a moderate degree of firmness, or suddenness, by the hand, the creaking will be heard distinctly by the ear, while the friction sensation is scarcely appreciable by the finger. Dr. Bright (Med. Chir. Trans. vol. xix.) regards this sound as almost pathognomonic of adhesions, while Dr. Corrigan (Dub. Journ. July, 1836) considers it only indicative of a tolerably dense and spongy layer of lymph lining the peritoneum; the latter view seems more consonant with other well known phenomena, but the subject is still open to further investigation."

This description, concise as it is, would enable the merest tyro to recognize the phenomenon in question without difficulty.

As bearing on the further investigation of this subject, a valuable case by Dr. Stokes may be referred to, page 477 of his book. We ourselves met with an interesting case, in some respects the converse of Dr. Stokes's. The disease was aneurism of the abdominal aorta, occurring in a muscular man, after sudden and violent exertion. For some weeks the tumour was circumscribed, and presented the usual physical signs. During the progress of the case, these were succeeded by a state of parts exactly resembling the case so well described by Dr. Beatty, in the 5th vol. of the Dublin Hospital Reports. The liver was pushed upwards, and still more *outwards*, without its dimensions from above downwards being apparently increased, and over its surface the most distinct *creaking* was to be felt and heard.

Our notice of this work is already long in proportion to its bulk, but not to its merits, or to the importance of its object. To those who have studied the subject of physical diagnosis in the wards of the hospital, and in the standard writings of Laennec, Stokes, Hope, Williams, &c., it will be most useful, refreshing their recollections of what they have seen and read, and impressing upon their mind the points of most importance; but it cannot supersede the more voluminous works referred to, nor is it designed to do so.

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*On Diseases of the Bladder and Prostate Gland, with Plates.*  
By W. COULSON. 8vo. pp. 274.

MR. COULSON has certainly discovered the secret of writing works acceptable to the medical public; all his books have gone through several editions, and popular favour in this, as indeed in the majority of instances, has not been bestowed without some reason. Mr. Coulson's treatises do not exhibit so much original research, as that they lay before the reader a clear, well arranged, well selected resumé of the labours of others, interspersed with so much of his own observations and opinions as show him to be practically conversant with the diseases of which he treats, and well able to appreciate the merits or defects of those who have written on them. We think the work before us is his best; as it is the third edition, however, it is not our intention to enter on a critical analysis of its contents, but we think it fair to the author to lay before such of our readers as have not either of the former editions, a short extract on a very interesting subject, Paralysis of the Bladder, as a

sample of the style. The first variety of paralysis of the bladder described, is that from injury or disease of the spinal marrow, which, as offering nothing new, we shall pass over. The next is that occurring in old people :

“ This complaint often attacks elderly persons, particularly those who are gouty and rheumatic. It is the result of general diminution of nervous and muscular power; the bladder being less sensible to the stimulus of the urine, and being incapable of obeying the will with the same facility as before.

“ Paralysis of the bladder is peculiarly, as Soemmering observes, a disease of old age; the excitability of the organic formation, particularly that of the muscular fibres, gradually decreases; the susceptibility of the nerves becomes limited, and the cellular membrane loses its tone. Hence, an attack of paralysis is often long announced by weakness in the loins, tottering in the step, and bending of the knees in walking. From this it may almost always be inferred, that a considerable alteration in the functions of the spinal marrow, and of the nerves proceeding from it and from the sacrum to the bladder, has taken place.

“ The bladder is rendered incapable of obeying the will with the same facility as before: no longer so susceptible of the customary excitement of the urine, it yields to the urine, and becomes distended, sometimes to an enormous size, even so much as to burst, when the patient almost immediately expires. Haller saw a bladder in a great drinker, which was able to contain twenty pounds' weight of water. Frank found the bladder so distended as to give the appearance of dropsy; twelve pounds of urine passed at one time through the catheter, although he did not remove the whole of it.

Baillie remarks that this expansion of the bladder may arise from an accidental circumstance, where the urine accumulates whilst the muscular coat still retains its peculiar power; or the muscular coat of the bladder may likewise be paralysed, and hence be incapable of expelling the urine. The difference between these two circumstances can always be ascertained by an examination of the case during life.”

If the retention arises from failure in the muscular power of the bladder, it is evidenced by an inability to empty it entirely, some urine always waiting behind. Besides this, however, we may mention what Mr. Coulson omits, that this state of things far more frequently is connected with enlarged prostate gland :

“ Children are likewise subject to both partial and complete paralysis of the bladder. In some cases, the urine continues to pass involuntarily by day as well as by night; and then the patient suffers more or less from this complaint during the remainder of his life. When this occurs only in sleep, children should be waked up in the night, twice or oftener, for the purpose of passing urine; and they should not be permitted to take late meals, or much liquid for some time prior to retiring to rest. Indeed, they should not at any time

be allowed to take much liquid. As lying on the back in bed tends to keep up this complaint, it should be guarded against. Cold bathing, preparations of iron, and other tonics, are of great use. This complaint usually improves as children get older, and often disappears after puberty, owing to the increased energy which the genito-urinary organs then experience. If it continue after puberty, the tincture of cantharides is often very serviceable, together with the occasional application of blisters across the sacrum or loins.

"M. Lallemand" strongly recommends the use of baths, medicated with aromatic plants; and mentions several cases which were cured by using them. After eight or ten baths the beneficial effects are usually observed, and fifteen or eighteen generally suffice for the cure. Sometimes the complaint returns after a few months; if so, the baths must be again resorted to.

"I have known this state to occur after an attack of scarlet fever. A boy, now seventeen years of age, was quite well till ten years ago, when he was attacked with scarlatina; and ever since that period he has been afflicted with incontinence of urine during the night.

"Incontinence of urine is frequently connected with a weak and scrofulous state of constitution; and often, in these cases, all remedies are unavailing. I saw some time ago a child, six or seven years old, with a large head, pale countenance, bad teeth, prominent sternum, large abdomen, and emaciated extremities, who, from its earliest infancy, had suffered from incontinence. All kinds of remedies had been tried without success. In this case, as in many others, there was great irritability of the bladder during the day, and, unless the desire to pass urine was attended to, it flowed off involuntarily. The urine was very acid.

"In incontinence of urine, it is of the utmost importance to preserve the patient from the consequences of a perpetual dribbling of the urine. For this purpose, a receptacle should be worn during the day to contain the urine as it is passed. The contrivances in ordinary use, composed of gum elastic, are objectionable, on account of the strong urinous smell which they soon acquire, notwithstanding every attention to cleanliness. An oval glass bottle or vessel composed of copper or platina, and covered with a piece of thin macintosh, is better adapted for persons labouring under this complaint. These contrivances are made for females as well as males. During the night patients should have a piece of macintosh cloth placed under them.

"In some persons, particularly in stout females, the urine will flow involuntarily on lifting a weight, or coughing, or any violent exercise. In such cases, there is no pain, no blood in the urine, no desire to make water often, but merely an involuntary flow on exertion; the action of the diaphragm and abdominal muscles overcoming that of the sphincter of the bladder. In females, incontinence often occurs after distention of the urethra for the extraction of calculi or foreign

bodies, and occasionally after difficult labours. Dr. Cory relates a rather interesting case of the latter, which speedily yielded to one-sixteenth part of a grain of strychnia, given three times a day.\* In these cases, it is probable that the sphincter vesicæ has been injured.

"In the end of gestation, incontinence of urine is not uncommon, being produced by the pressure of the uterus on the bladder, by which the urine is expelled involuntarily, whenever the woman coughs or moves quickly; at least she cannot retain much of it, being obliged to void it frequently, though without stranguary. For this complaint there is no cure; and many regard it favourably, as an omen that the child's head is resting on the os uteri. When the uterus is very pendulous, some advantage may, in this respect, be obtained, by supporting the belly with a proper bandage, attached to the shoulders.

"Incontinence of urine, resulting from a mere weakness of the neck of the bladder, is common in those who have had very large families, ten or twelve children, for example. In these cases, more especially if the child is large, or the pelvis small, when the labour has been severe, the bladder is apt to get so infirm about the neck, that it loses much of its retractive power, and, perhaps, from the moment of delivery, the woman is incapable of retaining the water: or if, at any time, she chance to cough, laugh, rise suddenly, or in any other manner contract smartly the abdominal muscles, the water comes gushing away. For years this disease may continue with greater or less severity, but it frequently cures itself, in good measure, and the first few weeks after delivery, say at the end of the fortnight, the patient is better; at the end of the month the retentive powers are still more increased; and in the course of a few more weeks she becomes able to hold the water very well, though still liable to gushes, when sudden efforts are made. Hence, where inconvenience is the result of an enfeebled cervix vesicæ, time must be looked upon as one of the principal remedial means; in some cases, advantage may be obtained from plunging the hips into cold water two or three times daily. The improvement of the general health is by no means to be neglected, for the more you improve the general health, the more you will increase those healing powers of the parts on which all cures are more immediately dependent."†—pp. 59, 64.

Paralysis of the bladder is also frequently brought on by neglecting to expel the urine when it has accumulated. Hence the over-distended muscular fibres become paralysed, and both incontinence and inability of expelling the urine permanently ensue:

"When the bladder is distended to a certain degree the urine will sometimes flow off involuntarily; and it has happened, at this stage,

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\* Med. Gazette for March 16th, 1839.

† *Vide* Blundell's Lectures, *Lancet*, 1828, p. 673.

that the paralysis has been overlooked, especially in corpulent persons, and incontinence has been supposed to exist, whilst in reality, the bladder was full and could hold no more. In the case, therefore, of a person who complains of not being able to hold his water, and especially in that of an old person, in whom the water is flowing off involuntarily, the surgeon ought not to give any opinion till after he has laid the hand upon the abdomen, and felt whether the bladder be distended or not; for very serious consequences may be produced by a mistake in this respect.

"In illustration of this important point, Mr. Lawrence states the following case:—'It happened to me, a good while ago, to be sent for, to see a gentleman labouring under an affection of the bladder; and the medical attendant, who had lately seen him, mentioned that the case was one of great irritability of the bladder, which would hold no water at all—the urine passing off as fast as it came into it. He said he had been doing all he could to get the bladder's natural power of retention restored; he had directed the patient to take diluent liquids; in short, he had done all he could to prevent it; but still the water ran off. It appeared to be a singular case. I put my hand under the clothes upon the abdomen; and I felt the fundus of the bladder forced up a good way above the umbilicus. I said that I had brought a catheter with me, and that I might as well introduce it, to see if there was anything in the bladder. I introduced it; and about five pints of urine immediately flowed off. The bladder had been, in this way, allowed to distend for about five days before I saw the patient; and the consequence was, that he never afterwards recovered the natural power of emptying that viscus; but he acquired, after a certain time, the art of introducing the catheter, which he still employs; he can introduce it, and let off the water whenever he finds a desire to do so; but since that time he never has been able to empty the bladder by the natural powers.'"—pp. 64, 65.

Sometimes paralysis supervenes, without any obvious cause, in persons apparently otherwise healthy, the nervous power being in some way diminished; it is a frequent symptom in hysteria. In typhous fever, some cases of compound fracture, and severe injuries of the lower extremities, the bladder often becomes paralytic. The same thing sometimes happens after operation, also after the use of opiate suppositories or injections. Mr. Coulson says:

"I may allude to a few of the causes which may deprive the bladder of the power of expelling the urine, although it cannot, under such circumstances, be said to be in a state of paralysis.

"The rectum may be distended by flatus, blood, morbid growths, or a foreign body: and, in these states, the neck of the bladder and the urethra may be compressed.

"I attended, with Mr. Brown, of St. Mary Axe, a case of diseased hip joint, in which matter had made its escape from the affected

joint into the pelvis, so as to press on the neck of the bladder, and had caused paralysis of that organ. On examination, after death, I discovered, that the matter had escaped through the acetabulum to the posterior part of the bladder, and had made a lodgment close to its neck.

"Children, whilst labouring under whooping-cough, and at the time of dentition, are liable to retention of urine. Joseph Wm. Brett, æt. two years and a half, whilst labouring under whooping-cough, was seized with inability to pass urine. Two days before, the mother had, on three occasions, observed some blood in the child's urine, and some red sand deposited in the urinal. A small catheter was introduced, and a pint of urine drawn off. After twenty-four hours, this operation was again repeated, and the functions of the bladder gradually returned.

"There are two periods in pregnancy\* when women are especially exposed to retention of urine, about the fourth month, and at the time of confinement."—pp. 68, 69.

The displacements of viscera which most frequently give rise to retention of urine, are retroversion of the womb and prolapsus of that organ, or of the vagina or rectum :

"A case is recorded by Mr. Coley,† of retention of urine caused by imperforation of the hymen. A young lady, aged sixteen, had been ill three days and nights, with retention of urine ; and her medical attendant had been under the necessity of relieving her by the introduction of the catheter, twice daily, during that period. The cause of the ischury was found to consist of an imperforate hymen, which, by totally preventing the discharge of the menstrual fluid, had produced a mechanical obstruction in the urethra. The external orifice of the meatus urinarius was situated in a cul-de-sac, and the hymen was tense and slightly protruded. The patient being laid on her back, a double-edged scalpel was passed through the hymen, which was very thick and tough, beginning at the upper part just below the meatus. Nearly four pints of tar-like fluid gushed out; after which the incision was continued down to the perineum. An aperture was thus made capable of admitting two fingers, into which a plug of lint was introduced ; at the end of two months she was cured.

"In performing the operation of dividing the morbid vaginal membrane, great circumspection is requisite, as death has been the consequence in several instances. De Haen, in the sixth part of his *Ratio Medendi*, mentions a misfortune of this kind, occasioned by the operator having carried his incision by mistake into the bladder ; and Denman lost a patient from peritonitis produced by the operation. Parsons‡ mentions the case of a young woman of seventeen, with imper-

\* *Traité des Maladies des Voies Urinaires*, par J. P. Desault, p. 160.

† *Lancet*, 1833, p. 395.

‡ *Parsons on the Blood*, p. 8.

forate hymen, who had retention of urine from the lodgment of the menstrual fluid in the vagina. When allowed to proceed without relief, the disease has terminated in death. An instance of this kind is recorded by Dr. Schmiedt, § in which the stagnant urine, accumulated in the vagina, eroded the passage and made an opening into the rectum, which proved fatal; the patient being only eight years old.

“The morbid appearances presented after death from paralysis are, dilatation of the bladder, attenuation of its coats, and a pale white appearance of the mucous membrane; these, at least, are the appearances found when the kidneys and the mucous membrane of the bladder have not been seriously involved in mischief, as after injuries of the spine. In the latter case, there is great vascularity of the mucous membrane lining the bladder, ureters, and the pelvis, and infundibula of the kidneys; the mucous surface of the bladder is thickened, of a slate colour, and presents, here and there, dark red spots; and sometimes it is covered with phosphate of lime, deposited from the mucus, or a white powder is found in the mucus itself, and the bladder contains some fetid urine.”—pp. 70–72.

The local treatment of paralysis of the bladder consists in the introduction, three or four times a day, of a full-sized silver or gum-elastic catheter, when the patient is old, well curved and rather larger than those usually made.

The constitutional treatment must be, in a great measure, regulated by the apparent cause of the malady. Strychnine is occasionally useful.

*Solution du Problème de la Population et de la Subsistance, soumise à un Médecin dans une Série de Lettres.* Par CHARLES LOUDON, Docteur en Médecine ex Commissaire de S. M. Britannique, Chargé de l'Inspection des Enfants employés dans les Manufactures d'Angleterre. Paris, 1842.

It cannot but at first sight seem matter of wonder, that after the restless energies of man have now for so many ages been looking out for matter whereon to exercise their seemingly irrepressible curiosity; that ever since the first temptation induced to the first transgression as a thing to be desired, “to make men wise,” no subject has been protected, either by its abstractness or by its solemnity, from the wantonness of his intrusion; his own constitution, the relation of his faculties, and his affections to each other, and to the circumstances in which he

§ *Miscellanea curiosa Medico-Physica Academiæ Naturæ Curiosum, sive Ephemeridum Medico-Physicarum Germanicarum.* Annus tertius, p. 198.

is placed, the nature of his own soul, of the higher intelligences by whom he is surrounded and influenced, nay, even of Divinity itself, have all, in their turn, been subjected to the impertinence of his scrutiny; nay, such questions have even been angrily agitated, have given rise to the distinguishing features of rival schools, and become the watchword of hostile factions; and yet, that during all this period of wrangling and of idle speculation, those general laws by which the comforts and necessities of life are produced and distributed, the principles by which any necessary derangement of them, by human institutions, may be most economically affected; in short, all the phenomena which relate to the distribution or production of wealth, should have been a science so very recent in its origin, and even to the present day so little studied or appreciated. Many causes may be assigned for this neglect, but pre-eminent amongst them all is the absence, until a comparatively late period, of any influence or power in the lower orders of the community, amongst those who now-a-days constitute our labouring classes. With the civilized notions of antiquity, this class consisted always of slaves, of those who were either captives themselves, or were the descendants of those who had been captives in war; the products of their labour were exclusively their master's, and their comforts were no more dependent on their own exertions, in the sense of being apportioned to them, than were those of any domestic animal which he might possess. In a still later period, while the vassal yet continued dependant on his lord, the same state of things may be said virtually to have subsisted. We know, too, that the other productive class was unknown to the more famous nations of antiquity, that of capitalists, at least as the term is understood by us, as a class totally distinct from, and not unfrequently opposed in interest to the aristocratical portion of society. What may have been their station and constitution among the few commercial nations, as Tyre and Carthage, the records of these countries are too scanty to allow of conjecture; we know, however, that even here the condition of the other productive class abiding in a state of slavery and dependance, would have prevented the science of political economy, as we understand it, from appearing in the world. In short, whilst the owners of the three great instruments of production, land, or technically speaking, natural agents, labour and capital, have not resolved themselves into separate and independent classes, each individual acting for his own immediate advantage, and while advancing this, insensibly co-operating in promoting the general good; wealth, indeed, may have been produced and distributed, but it was produced by

coercion, and distributed by caprice; there were no laws of fixed and uniform operation in action; there were no materials from which a science could be deduced. It was not until these three classes had acquired an absolutely independent action, that the phenomena of which the science is conversant existed; it was not but by the attention which the collision of these interests attracted, that the science itself was called into being.

Here, then, is the answer to those who object to political economy, that it is a science of recent origin. If the objection means any thing, it means to enlist the voice of antiquity against it; it says, you political economists make a great ado about your theories, of which the legislators of Egypt, or Greece, or Rome, or even of England, in her proudest days, knew nothing. Could anything in the relations of society have escaped them, which we, forsooth, are now-a-days to be instructed in? To all which our reply is, that it is not only possible but necessarily so, if the elements of society be virtually altered; if the class that formerly piled up monuments of brick, which exist but to record the nature of the labour by which they were erected; or who thought it their highest duty to swell the train of their liege lord in the field, and their greatest privilege to share in the profusion of his hall,—if this class becomes sturdy and independent, if they begin to perceive that the other classes of society are mainly dependant upon them for the comforts which they enjoy, if they at the same time learn that by supplying them with these they most effectually provide for their own necessities,—a great revolution has been wrought, new elements have been introduced, and relations before unheard of will consequently spring up. The very history of the science indicates the struggles in which it originated. The first democratical elements of power sprung up in the large trading towns. Did any noble wish to secure their alliance, or, as was the most usual case, did any monarch desire to enlist them on his side to resist the encroachment of his nobles, his custom was to grant them certain privileges and immunities; to be favoured beyond others thus came to be considered the surest road to promote the greatness either of a city or a country; hence arose the whole system of interference with industry, in the shape of bounties, restrictions, and prohibitions; a system which has slowly and gradually yielded to more perfect knowledge, but which long denoted, by the errors which polluted the stream of the science, the troubled source in which it had its origin.

Our object in noticing thus the cause which is to be assigned for the recent origin of political economy, is to obviate the objection which has been too frequently brought, that if there was

anything in it, it would have been entertained long ago ; and to give a reason why so important a problem as that which forms the subject of the work which heads this article, should be considered by many as yet admitting of solution. As to why, now that the science has sprung into life, it has not been more generally cultivated, it is less necessary to speak ; partly, no doubt, it is to be assigned to the uncertainty which necessarily attended it while it was yet in its infancy ; principally, however, is it attributable to want of patience to investigate, or humility to learn, or candour to acquiesce, on the part of its disciples. As affecting the principal classes into which society is divided, every economical question seems to a certain extent to have a political bearing ; this political aspect is further increased by the circumstance of rival factions in the state having adopted, for political purposes, the economical interests of the different classes ; and as few have not inherited or adopted some political creed long before their judgment is capable of examining the problems of political economy, there are few who do not address themselves to this study with their minds warped and prejudiced ; its truths are slighted, or but coldly admitted or explained away, and between the prejudiced man who cannot receive, and the self-sufficient man who is too indolent to investigate, its truths fare as did the sublimer truths of our religion ; to the one it is a stumbling-block, to the other foolishness, as if there should not merely be a likeness in truth itself, but also in the treatment which it is to experience.

Dr. Loudon's book professes, as its title declares, to treat of one of the most interesting and most momentous subjects connected with the science, the supplying the population with the subsistence necessary to its preservation ; he introduces it as " The solution of the problem of population and of subsistence." That we may fully appreciate the solution at which he professes to have arrived, let us distinctly state the difficulty involved in the question, premising, that so far as the statement of the case goes, it is agreed upon by all political economists of any consideration, with one distinguished exception, the late Thomas Michael Sadleir, of whom we will have occasion to speak presently. This, then, is the state of the case, or problem, as Dr. Loudon calls it : mankind have a natural tendency, if not checked, or restrained, to increase at a very rapid rate, in what has been termed a geometrical ratio, as 2, 4, 8, 16, 24, &c., while the products of the soil are at the same time increasing but in an arithmetical ratio, as 2, 4, 6, 8, 10, &c., the one in fact, increasing by multiplication, the other by addition : the unavoidable inference from this is, that the na-

tural tendency of man (not being checked, as we before said) is, to outrun the subsistence provided for him. To keep the due level between population and subsistence, to guard against the misery which must result from even an approach to that state of things, when it is likely to outstrip it, by suggesting the only means by which they can be obviated, was the great practical purpose of Mr. Malthus, and the various economists who have adopted his statement.

It is plainly too favourable a view of the fertility of the soil, leaving agricultural improvements out of the question, to describe its products as increasing in arithmetical ratio; this would only be the case while there remained uncultivated lands of the greatest fertility to resort to; so soon as inferior soils were had recourse to, the disproportion between the rate of increase of mankind, and of subsistence, would manifestly be increased; but leaving this out of consideration, it is plain that in any given country, the disproportion must be enormous between the ratio of increase in its inhabitants, and the fruits of its soil, when we remember that the products of the human race contain in themselves the powers of reproduction, and that the products of the soil can be reproduced but by returning to the same soil from which they sprung.

Malthus having thus enunciated and expounded his theory of the relative rates of increase of population and subsistence, and in so doing, having shewn, that upon the maintenance of the due level between them, the happiness of mankind depended; he proceeds to point out the checks and restraints by means of which this level may be preserved; these he divided under the two heads of Positive and Preventive; the latter being immediately under our own control, the principal amongst them being prudence in the contracting of marriages: the former, as wars, pestilence, and famine, being the necessary consequences of the neglect of the latter, and thus, mediately and indirectly, put within our power. We cannot but think, that, in entertaining this question, too much stress has been laid on it, both by Mr. Malthus and his supporters on the one hand, and by his opponents and calumniators on the other; as if it were of great *practical* importance; whereas, in truth, it should to us be one almost wholly of speculation. We know of no one country which is cultivated at all up to that pitch at which its inhabitants can reasonably dread that the resources of their land is nigh to being exhausted. It is impossible to tell how many millions more our own land would maintain, if the agricultural improvements already established in the sister kingdoms, and on the continent, were fully adopted: if we

examine impartially, we will find it is rather to the indolence and vicious institutions of man, than to any deficiency in the productive qualities of the soil, that the misery which we too frequently witness is fairly to be attributed; and when we take into account the boundless resources which untrodden lands supply, through the medium of emigration, we must confess, that all fear of outstripping the productive energies of the world, if developed as they may be, is, at the present stage of its existence, perfectly chimerical.

This, then, is the question to which our author addresses himself; adopting the theory of proportionate increase, as laid down by Malthus, he concurs with him in the paramount necessity of preserving the proper level, but refuses to adopt those preventive checks on population which he suggests; proposing, in lieu of them, one which we will now proceed to place before our readers, and from which indeed, we cannot withhold the very equivocal merit of originality. The check on population which he suggests, is, *that every woman should suckle her own child for the space of three years*. But let our author speak for himself:

“La période d’allaitement prescrite par la nature à la race humaine est donc de trois ans, parce que ce n’est qu’à l’expiration de la troisième année que l’enfant se sevre de lui-même, et, de plus, comme j’espère le prouver, ce ne fut jamais l’intention de la nature qu’aucune des douze cents femelles mammifères concût pendant la lactation, pour cette raison fort simple que la nature n’exige à la fois qu’une seule de ces deux grandes fonctions; celle de la gestation, ou celle de l’allaitement, la nature ayant un qui fut aussi essentiel que la naissance du petit être animé, c’est-à-dire sa conservation. Voilà mes premières bases pour résoudre le problème de la population, et de la subsistance.”

Such then, is his *solution*; women, he says, in general, will not conceive during the period of lactation; but as all women should nurse their children until the end of the third year, every fourth year a child will be born in each family. And elsewhere he says:

“Une conséquence de ce principe est que jamais ce ne fut l’intention du Créateur qu’une femme eût plus de sept enfans qui tous vivraient jusqu’à leur troisième année; au lieu de vingt, vingt-deux ou vingt-quatre, comme nous le voyons très souvent dans des familles particulières.”

It is not our intention here, to examine the arguments on which Dr. Loudon relies, to establish his most questionable premise, that women should, or could nurse their children for the period of three years. The writer of this article is not of

the medical profession, but although he considers this statement to be of that sort which no one of ordinary observation or information need hesitate to dissent from, he prefers opposing to Dr. Loudon the deservedly high authority of the most eminent British physiologist, Dr. Carpenter. In his "*Principles of Human Physiology*," he thus expresses himself:

"The change which naturally takes place from the condition of colostrum, to that of true milk, during the first week of lactation, is a very important one: the colostrum has a purgative effect upon the child, which is very useful in clearing its bowels of the meconium which loads them at birth, and thus the necessity for any other purgative is superseded; *the return to the character of early milk, which has been stated to take place after the expiration of about twelve months, seems to indicate that nature designs the secretion no longer to be encouraged*; the mother's milk cannot then be so nutritious to the child as other food, and every medical man is familiar with the injurious consequences to which she renders herself liable, by unduly prolonging lactation."

And in a note he adds:

"One of those which has particularly fallen under the author's notice, is debility of the retina, sometimes proceeding to complete amaurosis; this, if treated in time, is most commonly relieved by discontinuance of lactation, generous diet, and quiet."—Section 689.

If further authority be required, we would refer to Marshall Hall, who speaks thus in his treatise on the Diseases of Females:

"The morbid effects of undue lactation only constitute another form of exhaustion, upon which so much has been already said. Undue lactation is not necessarily protracted lactation; sometimes the patient does not recover her strength after her confinement from the exhausting influence of suckling; many are incapable of nursing more than three or four months, when the symptoms of undue lactation begin to show themselves."

Such, then, are the opinions put forward by the most distinguished authorities, and, we believe, universally acquiesced in by the medical profession in this country; and with this statement of them we would gladly drop all further notice of this part of our subject, which is, in truth, foreign to our main purpose; but we cannot resist giving a specimen of the arguments on which Dr. Loudon relies; it will be an illustration of the lengths to which a vain man will resort to bolster up the theory from which he hopes for the reputation of a discoverer, but which, in reality, was most likely to have been suggested by the chance combinations of a scrambling, undisciplined mind; for example:

“ Si nous bornons nos observations aux mammifères monofœtales, qui, par leur analogie, sont assurément les plus propres à l'explication de notre sujet, nous trouverons que la durée de leur allaitement est égale à la septième partie de cette portion de la vie antérieure à leur parfait développement, et à environ *la quarante-neuvième partie de la durée la plus prolongée de l'existence*, ainsi l'éléphant parvient à l'âge adulte vers la dis-huitième année et vit jusqu' à cent vingt ou cent trente ans; sa femelle allaite ses petits pendant deux ans et demi; le chameau se nourrit à la mamelle pendant un an, devient adulte à sept, et vit cinquante ans environ; la vache, l'âne et la jument suivent à peu près la même proportion de temps.” \* \* \*

“ L'homme est complètement développé à vingt et un ans; *peu ont vécu jusqu' à cent cinquante*. En divisant par sept le premier nombre, et le second par quarante-neuf, nous trouverons que l'allaitement doit être de trois ans pour l'espèce humaine.”

It might puzzle the Doctor, ingenious though he be, to accommodate this argument to the patriarchal longevity.

It would be an unpardonable intrusion on our readers to dwell any longer on this portion of our subject; we will pass by, without examination, the references which he makes to the habits of various countries, and the other proofs and illustrations which he sets forth; for even if his premises were ever so well established, and his reasoning ever so conclusive, he yet would not have advanced one tittle towards resolving the difficulty involved in the subject, towards “The Solution of the Theory of Population and of Subsistence.” The difficulty, as we have already stated it, consists in the tendency of population to encroach upon, and finally, if unrestrained, to outstrip subsistence. Dr. Loudon has pointed out a means, which, supposing it to be practicable, and that it were generally adopted, would go far, indeed, to *delay* the apprehended evil; to transfer it to a remoter period; but still it would be but a temporary expedient, to us, at the present day, a matter of little moment, and it would leave the main difficulty exactly as he found it, wholly unprovided for. In short, whether the “allaitement triennal” be adopted as a law of nature or not, the average surviving offspring of each human couple must either be, in number, less than two, or be exactly two, or exceed that number; if it be less than two, the human race must rapidly decline, which certainly never was the intention of Him who blessed them and said, “increase and multiply and replenish the earth;” if it be exactly two, the human race should have remained stationary from the time when the period of its longevity had been arrived at; a supposition equally repugnant to the divine benediction; if, then, it be more than two, it must be increasing in a geometrical ratio, unless we suppose a great proportion of the human species to be incapable

of reproducing their kind, a supposition which we conceive will be at once, and unhesitatingly, rejected, as at variance with the manifest facts of the case, although something tantamount to it seems to have been held by Mr. Sadleir, of whose theory we will presently speak.

The chief end, however, which we proposed to ourselves in noticing Dr. Loudon's book, was not so much to point out the fallacies peculiar to himself, as to call attention to a fundamental error, which, while it pervades his reasoning, is, at the same time, the very mainspring and life of all the popular speculation on this subject; and in which consisted the whole essence of that system which was set forth in opposition to the Malthusian by the eloquent, the good, and the highly gifted Thomas M. Sadleir. This was his theory; he laid it down that "the prolificness of human beings, otherwise similarly situated, varied inversely as their numbers;" a proposition which he subsequently qualifies by adding, that when he says the prolificness of human beings is regulated by the space they occupy, he means it "to have reference to its potential produce, that is, to the means of subsistence;" this he regards as an ultimate law of nature, or to speak more correctly of the great Author of nature; he attempts not to account for it, he beholds in it a manifestation of the Creator's wisdom and benevolence, a fit subject for his love, for his wonder, and for his reliance. He thus contrasts it with the Malthusian system:

"This latter," he says, "assumes that God himself has, in order to people his universe, invested man with a fixed and unvarying measure of prolificness, constantly tending to excess and misery, and that therefore his blind and blundering calculation has to be perpetually regulated by human interference, which it may be assumed will constantly manifest itself in hostility and cruelty."

Of his own system he says:

"In a word, it combines the duties, the feelings, and the interests of human beings, and lays the whole in one united and perpetual act of gratitude, at the footstool of the eternal benefactor. I challenge any one to deny these consequences, if he believes that the Creator has, in virtue of that prescience, and conformably to that benevolence he has manifested in all other of his visible works, himself regulated the prolificness of his creatures in reference to the circumstances in which his providence shall have placed them."

Now, it can hardly be necessary to call attention to the great (we are sure unintentional) injustice here done to the Malthusian theory; this representation of it first begs the question at issue, by assuming that the extremest capability of production is the measure of prolificness by which it was intended that the world should be peopled; its next gratuitous assumption is, that the

impulses to the reproduction of the species have any greater claim to be termed divine than their counteracting principles, here contemptuously designated as "human interference;" it reasons upon the characters of "divine" and "human" thus arbitrarily imposed, and it most uncandidly puts the whole, not as objections made to the Malthusian theory, but as inconsistencies involved in it.

With regard to the arguments upon which Mr. Sadleir himself relies for the support of his own theory, they are almost wholly statistical, they could hardly be otherwise, since the law which he conceives to limit and regulate human fecundity he regards as an immediate arrangement of providence, not acting at all through the medium of any of the fears or wants or desires of man. But into the labyrinth of statistics it would be impossible to enter; each party relies on them, each finds them surprisingly conformable to their own peculiar views, and each party impeaches the inferences which their opponents arrive at from them. Without, however, becoming entangled in complicated considerations of so uncertain a character, there is one statistical fact apparent to every one, and which is strikingly opposed to Mr. Sadleir's theory, namely, that the occupation of the Earth has been constantly extending from the very first peopling of it down to the present day. No passion for exploring waste and inhospitable lands could have induced mankind to encounter the hardships and privations of emigration, nor can any intelligible motive be assigned for it, than this, that the land was insufficient for the support of its increasing occupants, a circumstance which was much more likely to be of frequent occurrence in the pastoral age than at the present day. But, secondly, we would go further, and meeting Mr. Sadleir upon his own high ground, we would tell him that his theory is not alone at variance with this striking feature in the history of mankind, but that it militates against that very attribute of divine benevolence which it was the great and noble purpose of his book to vindicate and uphold. This apportionment of the prolificness of a community to its means of subsistence must be brought about either individually, by making each couple fruitful or sterile as their means are abundant or otherwise; or it must be done in the mass, without any respect to individuals, regarding merely the aggregate wealth, and the aggregate fecundity of the people. That it is not effected in the first way is obvious; it would be altogether too absurd to say, that a man's substance increases as he increases the demands upon it; that his wealth is proportioned to his expenditure; shall we then admit that it is effected by the latter way, and represent the Deity as capriciously inflicting upon

thousands the curse of sterility, that when "he blessed them and said increase and multiply," it was in his purpose to withhold the fruits of his benediction from those whose wealth and comforts best fitted them to appreciate it (and it is thus Mr. Sadleir represents his law as operating), and this, in order to keep the total amount of the population to its just level. Is this the law which Mr. Sadleir would attribute to the great Author of nature? is this the view of the operations of the Creator which he would wish to put forward? Or would he not rather renounce the theory from which such consequences are legitimately deducible? and would he not confess that it is even less in accordance with the divine attributes, and less analogous to the divine operations, than its rival system, which adjusts the level between population and subsistence by individual affections impelling, and individual considerations withholding? which says, that as this earth is preserved in its orbit by the separate operation, but mutual counteraction of two forces, the centrifugal and attractive; so that its population is preserved at its due level by the similar action of the affections and prudence; that while the former induce every man to propagate his race, the latter, in certain stages of society, suggest considerations immediately relating to himself and those who are dear to him; that these continue to increase and grow up with the circumstances of the country and of its population, and thus, through the medium of the control which they exercise on the natural affections of man, go far to counteract the unavoidable tendency in population to press on subsistence.

But throughout all these theories there is one great error prevailing,—it is the avowed basis of Mr. Sadleir's reasoning,—it is tacitly assumed in Dr. Loudon's,—it infects that of Malthus by supplying a false foundation for reasoning just in itself, and exposes it to peril by furnishing objectionable arguments for its defence; and it is universally taken for granted by the popular scribblers and talkers of the day. Nay, even wise and good men have on this question insensibly adopted it; nor can sound views ever be expected until it is utterly exploded, not only from the writings of political economists, but from the public mind and pervading habit of thought. It is the total neglect of this great truth, that the earth itself, as well as its inhabitants, manifest the consequences of their Creator's curse; that they no longer furnish manifestations of his will; that the earth has become "corrupt before God;" "for all flesh has corrupted his way upon the earth;" and that they have fallen from that blissful place in creation for which they were destined, and which they once filled when "God saw every thing that he had made, and

behold it was very good." One of the consequences of this fallen condition is, that it is utterly impossible that we could now determine, from any view of the present constitution of man, what habits or course of action might have been in conformity with his original nature. This question would be more properly treated in an inquiry connected with ethical science, and it is comparatively unimportant as regards the matter in hand. It is the other consequence of the fall which is immediately and vitally connected with our subject. This, however, would even of itself go a great way in overthrowing most of the popular reasoning on this question. To take Mr. Malthus, for example, when he tells us, that the rate of human increase is the result of the opposing principles of natural impulse and prudence; whatever he may have done towards supplying us with the best rule of conduct which our position admits of, he has not advanced one step towards determining the rate at which it was the intention of Providence, that mankind should increase; not one step towards discovering what all these writers term, the *natural law* of population; and this is simply for the reason which we have assigned, because neither the controlling principle, nor the affections of man, exist now in the relative degrees of thought in which they were originally created. Consequently, the attempt to discover from their present direction what may have been the intention of him who framed and adjusted them differently, then when he enacted those laws which we call "the laws of nature," cannot but be futile and idle in the extreme. It is worthy of remark, that in the kindred science of ethics, the ignorance of this truth in ancient days, and the neglect of it in modern times, has been the great cause of the infinite variety of sects and schools which have at different times prevailed. Assuming the *sequi naturam* to be the guide of life (as it was no doubt before the fall), they have proceeded to ascertain what this nature was from the phenomena which it now exhibits; hence, selecting some particular phase, as accident, or the bias of their own disposition may have directed their attention to it, we have self-love put forward by one, benevolence by another, sympathy by a third, all manifestly partial and limited aspects of human nature; and notions into which they never could have fallen, had they been convinced of this truth of which we have spoken, that we never can, from the deranged constitution of man, so ascertain what it originally was, as to determine what course of action would have been most conformable to it.

However, it is not so much this derangement in the constitution of man, which led to the first transgression, as the curse which was its consequence, that concerns the matter before us;

"and unto Adam he said, because thou has hearkened unto the voice of thy wife, and hast eaten of the tree of which I commanded thee, saying, thou shalt not eat of it; *cursed is the ground for thy sake*, in sorrow shalt thou eat of it all the days of thy life; thorns also, and thistles shall it bring forth to thee, and thou shalt eat the herb of the field. In the sweat of thy face shalt thou eat bread, till thou return unto the ground, for out of it wast thou taken, for dust thou art, and unto dust shalt thou return."—What now becomes of all those theories which profess to discover a *natural law* operating in apportioning the human race to the subsistence which is provided for it? It will not be disputed that those general principles by which the operations of nature proceed, and which we term natural laws, were all ordained at the creation of the world, and have since continued, unaffected either by change or by addition. "Thus the heavens and the earth *were finished and all the host of them*, and God blessed the seventh day and sanctified it, because that in it he had rested *from all his work which God created and made*;" when we say that they have *all* continued without change or addition, we of course except those special instances which we are particularly instructed of, and which, moreover, were specially provided for; thus the forfeiture of his immortality, the terrific consequence of man's transgression, has been remedied and provided for through the sublime and stupendous mystery of the atonement; furthermore it may be observed, and in connexion with the very subject before us; that the temporal consequences of the curse, which inflicted sterility upon the earth, were to a certain extent remedied, and provided for by the permission to eat animal food, a permission not accorded to Adam, of which there is no trace or mention in the antedeluvian world, but which is expressly conceded to Noah after the deluge; thus to our first parents "God said, behold I have given you every herb bearing seed which is upon the face of all the earth, and every tree, in which is the fruit of a tree yielding seed, to you it shall be for meat;" but unto Noah, "*every moving thing that liveth* shall be meat for you, *even as the green herb* have I given you all things."

Here then, we have a plain statement on the page of Holy Writ, against which no arguments, from whatsoever source derived, can avail anything; which, to Mr. Sadleir, when he tells us, that the constant tendency of population is to press near to, but never to reach the limits of subsistence, and this owing to the immediate action of a law of our nature over which we have no control; and to Dr. Loudon, when he tells us, that society is constantly outstripping the limits of subsistence, and this

owing to the habitual neglect of a law of nature which we have the power of adapting ourselves to, or of deviating from; replies at once to both, by showing that in the *natural* constitution of things, that difficulty could not have existed, which, they in their respective theories presume *nature* to have provided for.

There is yet another class of reasoners, if they can be thought worthy of the term, to whom the same consideration will supply a sufficient answer; they, who without any reflection, following the impulse of the moment, partly to excuse their recklessness, partly to drown reflection, adopt such sayings as these, that "God never sends mouths without sending meat to fill them," that we are commanded to increase, and multiply," and such like; it may not be amiss to remind these persons, who would thus make their Creator a participator in the guilt of their imprudence, that the provision which was originally designed for the human race, our first parents occasioned the limitation of; moreover, that the text, "increase and multiply" occurs as a blessing, and not as a command, that precisely the same language was addressed to the irrational animals who are incapable of comprehending either a precept or its sanctions, and that there is this difference between the command of Omnipotence and his blessing, that under no circumstances can any deviation from the former be justified or permitted; while the latter may be renounced, and foregone, when circumstances shall have caused it to differ from what had been its original purpose.

Having now entered thus fully into the errors which we deem to be prevalent, it may be expected that we will not conclude without saying something of the system which we held to be correct. From what we have incidentally observed, this can be briefly done; it will be seen that, with one exception, we agree upon all points with Mr. Malthus, an author, who has been much misunderstood, and greatly, we fear, designedly misrepresented; that we agree with him in holding the tendency of population to press upon subsistence; that we agree with him as to the only means by which this evil can be counteracted; but that we differ from him as to the end and character of these means; that we maintain it is not a special law, originally intended for regulating the numbers of the human family, inasmuch, as that originally the necessity for their limitation was neither contemplated, nor provided for; but that it is the mere result of the exercise of those principles by which we are enabled to guard against every other ill that menaces us. An increasing population must either be provided for, or guarded against; every thing which increases the produce of the soil, or extends that portion of it which can be applied to the maintenance of man;

every improvement in agriculture, every improvement in machinery which supersedes the use of cattle, and makes that soil which had been applied to their support available for the sustenance of mankind ; all such things unite in effecting the one : well arranged systems of emigration, with measures of the same tendency ; or else prudence in contracting matrimonial engagements, will alone accomplish the other. We believe, that, like every other evil, that of a redundant population follows necessarily and in the way of natural consequences, from the imprudence in which it originates, and that these originating circumstances are placed completely under our own control. This theory we hold to be alone reconcileable with the facts which we observe, with the feelings of which we are conscious, and with the analogies which the whole constitution of things presents.

We are convinced, however, that this whole question is concerned about a difficulty purely of a speculative character ; that nothing but the most extreme and most culpable indolence, or the most vicious institutions can give it any thing of a practical bearing to us or to our children's children ; and when we take into account the seemingly inexhaustible resources of the human invention, we may well doubt, whether, though the tendency must ever subsist, the occurrence of the evil need ever be apprehended.

R. H. MILLS, A. M.

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*Pulmonary Consumption ; its Prevention and Cure established on new Views of the Pathology of the Disease.* By HENRY GILBERT, Member of the Royal College of Surgeons, London.

WE diligently waded through several pages of the volume before us, wondering the while what could have induced the author to write such a book ; let it not be supposed, however, that we failed in detecting the New Views of the Pathology of Phthisis announced in the title ; on the contrary, every page teems with doctrines as novel as the fact, that "there can be nothing more unwise than for those afflicted with this malady to leave town (i. e. London) for country air," and that "to repair to the country districts (from London) of England is decidedly unwise." In order to fully comprehend the drift of the following quotation, the reader must be apprized of the fact, that Mr. Gilbert's production is intended for the general as well as the professional reader, and introducing his New Views of the Pathology, he modestly informs us that

"I do not pretend to be possessed of greater discernment, or sounder judgment than others [for once we agree with him], by which I have been enabled to throw light on that which has so long been enveloped in darkness; but having devoted my particular attention to this malady for years past, and having made its pathology and treatment the object of my studies and reflection; having had innumerable opportunities of investigating, minutely and carefully, the various tissues and structures implicated in the disease, at Paris, under the celebrated Louis; having had, *moreover*, the advantage of the experience of my predecessors [in this we suppose he is singular], in some instances pointing to truth, and in others guarding *me* against error, it surely is not unreasonable to *hope*, that from such a combination of favourable circumstances, some good may result."

From this we passed on, under the guidance of "auspicious hope," to discover the results derived from the above-mentioned "combination of favourable circumstances," and notwithstanding we frequently felt that "*HOPÈ* the charmer lingered still behind," we plodded on and at last came to the "result," that phthisis is produced by a *want of discernment in the mouths of the lacteals, by which unorganizable matter is taken up, and deposited in the form of tubercles in the lungs*.

The work is dedicated to the eminent Surgeon, Mr. Crosse of Norwich; we trust he was ignorant of its contents.

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*An Essay on Diabetes.* By H. BELL, D. M. P., one of the Librarians of the Faculty of Medicine of Paris. Translated by ALFRED MARKWICK, late Externe to the Hospital des Veneriens, Paris. Member of the Parisian Medical Society.

THIS little treatise originally appeared in the *Dictionnaire des Etudes Medicales*, and as it now stands, may be considered as the second edition of the article on diabetes. It is a good compilation from the works of others, containing few original observations. We cannot conclude this notice without expressing our satisfaction with the manner in which Mr. Markwick has performed his part as translator, and regret he did not occupy himself with some other work, better calculated to remunerate him for his trouble.

*Observations on Ulcers of the Legs and other Parts, showing that the most obstinate and intractable Case may be speedily cured by mild Methods of Treatment. To which are appended some Remarks on Scrofulous Disorders. By ARCHIBALD MAXFIELD, Surgeon to the South Hants Infirmary, &c. &c.*

THE treatment employed and recommended by Mr. Maxfield is extremely judicious, but by no means new, and has been adopted with different modifications by surgeons since the days of Baynton.

"It consists chiefly in the application of gentle and equal pressure to the whole cavity of the ulcer, assisted by simple dressings without any kind of greasy ingredient, and firm support applied from the toes to the knee in the manner hereafter described."

At p. 35, Mr. Maxfield says :

"The method I adopt in applying bandages to the lower extremities is, to put the heel of the leg to be bound on the edge of a table, about a foot higher than the cushion of the chair on which the patient is seated, in which situation it remains for two or three minutes before the rolling commences, and until that process is finished. The intention of placing the limb in this elevated and inclined position is, to empty the veins of the blood they contain, whether preternaturally full or only circulating a proper quantity, which being accomplished, the individual can bear a much greater degree of pressure from the bandage than when it is applied to the limb in any other posture ; and when the upright position is resumed, the superficial veins of the leg, bound evenly and firmly while so placed, cannot become unequally or much distended, and consequently the person is enabled to walk about during the cure of almost every variety of ulcer, with the most perfect freedom from pain."

We strongly recommend this little treatise to the attention of our readers.

*Letter from DR. CARPENTER.*

TO THE EDITORS OF THE DUBLIN MEDICAL JOURNAL.

GENTLEMEN,—I hope that I shall not be accused of an undue sensitiveness to criticism, if I trouble you with a few remarks on the Review of my "Human Physiology," contained in your last Number. I have been too much gratified at the high commendations which you have on two preceding occasions bestowed upon my labours, to feel any thing but regret that you are not able to speak in like terms in the present in-

stance; and I am by no means disposed to impute it to you as a fault, that you cannot see the same clearness of thought and expression in my last work, as in my preceding one. But it is certainly the fact, that my opinions have been very considerably misstated on a very important subject, as to which I particularly desire to be correctly understood.

The nature of the connexion between *Mind* and *Body*, is a question (as you and your readers well know) which has been energetically discussed among philosophers of all ages. Not being myself able to arrive at satisfactory conclusions respecting it, I have thought it my duty to state the two principal hypotheses which have been entertained on the subject, and to advert to the chief difficulties attendant upon each. This I have done without giving any preference to either.

One position, however, I *have* maintained; and it appears to be in mistaking this for what is commonly termed Materialism, that your Reviewer has chiefly erred. If you will turn to the 108th paragraph of my "Human Physiology," you will find that it ends with the following passage:—"When we speak of sensation, thought, or emotion, therefore, as *functions* of the nervous system, we mean only that this system furnishes the conditions under which they take place in the living body; and we leave the question entirely open, whether the  $\psi\upsilon\chi\eta$  has, or has not, an existence, independent of that of the material organism, by which it operates in man, as at present constituted. Again, after pointing out (in paragraph 102) the limitations which are set, in our present state of being, to the operation of one mind upon another, through its material instruments, I conclude:—"that in a future state of being, the communion of mind with mind will be more intimate, and that man will be admitted into more immediate converse with his Maker, appears to be alike the teaching of the most comprehensive philosophical inquiries, and of the most direct revelation of the Divinity."

The doctrine which I have endeavoured to inculcate in these and other passages, is simply this;—*that every act of mind is inseparably connected, in our present state of being, with material changes in the nervous system.* This doctrine is entertained by many of the most distinguished physiologists of the present day; including several who are most decided believers in the separate immaterial existence of mind. The arguments I have adduced in favour of it, are principally derived from the impossibility (for such it appears to me) of assigning a limit to the connexion which clearly exists between corporeal and mental operations in the act of sensation, felt or remem-

bered, and in the changes to which that act gives rise. I might now add arguments derived from the recent chemical researches of Liebig and others; which completely establish it to my mind as a physiological fact,—that, the more prolonged and energetic the operations of the mind, the greater is the *waste* of nervous matter, as evinced by the presence of an increased amount of phosphates in the urine, and by the demand for fatty matter which is employed in the renovation of the tissue.\*

Looking at some passages in the Review, I am not certain whether a candid reader might not think that “perplexed thought,” and “obscure way of writing,” are at least as much the faults of the critic, as of his author. The following sentence, for example, appears to me to distort my very obvious meaning into arrant nonsense. “We are told,” says the Reviewer, “that ‘the operations of the mind, and its instruments, taken collectively, constitute what are known as the functions of animal life.’ Here the mind and the body, taken together, are defined to be functions, and functions of a peculiar kind.” *My* statement was, that the *operations* of the mind, and of certain parts of the body, constitute the *functions* of animal life;—a definition quite conformable to the received acceptation of the word function, and agreeing in substance with that in common use amongst physiologists since the time of Bichat. If I had been guilty of the absurd error of “defining the mind and body to be functions,” I should quite agree with your Reviewer, that such subjects are beyond my depth.

I am, Gentlemen,

Your obedient Servant,

WILLIAM B. CARPENTER.

Bristol, Sept. 14, 1842.

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\* The peculiar ingredient of the nervous tissue, is a *fatty acid*, containing a very small proportion of azote, but united with a considerable amount of phosphorus. The amount of change which takes place in this or any other tissue, may be estimated in two ways;—first, by the appearance in the excretions, of its peculiar ingredients, set free by decomposition;—and second, by the demand set up for the materials of its re-formation. Now, it is well known, that, when the nervous system has been in unusual activity, there is a marked increase in the phosphatic deposits in the urine; and, as the quantity of phosphorus in any other of the soft tissues is very inconsiderable, it is scarcely possible to attribute this liberation of phosphorus from the system to any other cause than the *waste* of nervous matter,—that is, its decomposition, resulting from the discharge of its vital function. Again, the close chemical relation between nervous and adipose matter, corresponds exactly with the old observation, that persons of “nervous temperament” are seldom or never fat; whilst those of inert bodily and mental habits are much more subject to this deposit. Since nervous matter is chiefly formed out of the same elements as those which would otherwise be employed for adipose tissue, it appears probable that the demand for these occasioned by the continual use of the nervous system, prevents the deposit of fat; whilst it inactively allows their accumulation in another form.

## SCIENTIFIC INTELLIGENCE.

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*On the starched Bandage in Fractures.*—M. Seutin, the eminent surgeon of Brussels, accompanied by Doctor Simonart, has just paid this city a visit. As is well known, he is the inventor of the use of the starch bandage in fractures. He availed himself of an opportunity afforded him by Mr. Cusack in Steevens' Hospital to put his apparatus on the leg of a little boy who had fractured both bones a fortnight before. Sir Philip Crampton, Mr. Cusack, and a number of surgeons and pupils were present; M. Seutin stated how anxious he was himself to exhibit the application of the apparatus, because he had found that one great reason of its not having been more extensively used, nay, in some instances not even tried, was owing to its having been generally misunderstood. One great objection had been, that the apparatus, when once put on, remained a hard case round the limb, allowing no room for the necessary degree of tumefaction, and consequently endangering the safety of the member by inducing gangrene; that as the parts were hid from view, no timely warning was afforded of such accidents. As the starch bandage was used, there was much truth in this objection; as M. Seutin now uses it, the occurrence of such dangers is obviated. He first applied a calico roller, moderately firm, round the leg; no starch was put on the inside of this bandage, as it would stick in the hairs, and prove unpleasant to the skin when it hardened. After it was applied, some starch was smeared along its surface; wherever pressure was wished to be avoided, pledgets of soft lint were put; a soft pasteboard splint, a little starched on the inside, was then placed on each side of the leg, and then one behind, the part about the heel and the hollow of the tendo achillis being well stuffed with lint; a pasteboard splint was also then put in front. These were secured by a bandage smeared with starch, the end of the bandage being turned down and stuck in front, so as to be easily found. More starched bandage was applied, till the whole was a firm and smooth case. This should be left for twenty-four hours; when it has become quite dry, it is then slit down along the whole front of the outside in the space between the tibia and fibula, down to the end of the foot; when the sides of this opening are held aside, the state of the limb can be examined. If it is found to press too much on any part, a little lint can be inserted, so as to raise the apparatus from the place pressed on: should it be desirable, any part of it covering a wound, &c. can be cut away, to allow the

proper dressings to be applied, and the discharge to get out. Modified as it now is, we cannot but think, that M. Seutin will have the gratification of seeing his method generally used. We insert the accounts given by his pupils, MM. Simonart and Porcelet, of the circumstances to be observed in the application of the starch bandage.

"In the construction of the starch bandage,\* use is made of the bandages of Scultetus, long or short, made of half-used linen, neither too coarse nor too fine, replaced if necessary in the central layers, by rather long compresses, extended the length of the splints, or even by the immediate application of pasteboard on the limb. Long bandages are preferred, wherever it is requisite to establish a regular compression, and that the lifting of the injured part cannot entail inconvenience to the patient, sharp pain, derangement in the coaptation, &c. Short bandages are reserved for contrary cases; they are disposed generally in three planes, it is between the layer in contact with the skin and the middle layer, that the pasteboard splints are generally placed; short bandages are especially employed in lesions of the pelvic extremity. The length or breadth of the bandages is proportioned to the part which ought to be covered by them. From the bandage which is applied immediately to the skin, more care is used than in the common bandage, to remove coarse edges, folds, irregular plaits; folds should be repeated as seldom as possible; these are kept as far as can be from the bony eminences, from excrescences, &c., which are first defended by some soft material, a layer of wadding, lint, &c., placed over or around these eminences, that besides are not entirely covered by all the bandages. These last precautions have for object to diminish the degree of pressure that the bandage could exercise more on them than on the soft parts, whose level these eminences exceed. Great care is taken that the bandages, and the containing apparatus generally, do not establish strangulation in some point of the length of the limb.

"All these minute cares, just described, are less to be enforced in applying the superficial layers of the bandage; in the case of penury, linen may be replaced by remnants of handkerchiefs, aprons, towels, &c.; often in fractures of the leg, when walking is authorized, we

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\* The following is the interesting account of what first led M. Seutin to the use of the starch bandage; it is not the first time mankind has been indebted to animals for valuable therapeutic agents: "A lady of this city was very fond of a goat, which one day broke its paw, while I was in the house; she besought me to relieve the poor animal; I willingly consented, but I was very much embarrassed when the question of contriving some means to keep the part fixed presented itself, for nothing offered fit to keep the fragments together. While I was thinking what to do, I observed an old piece of rope belonging to a well, and some starch which was for stiffening linen. I availed myself of these two means which chance presented to me, and I constructed on the spot with them a bandage, which I was astonished to find some days after perfectly adapted to the case. This circumstance opened my eyes to the use that might be drawn from starch in the therapeutics of the affections with which I had been occupied for some time, and it is thus that my experiments began on the bandage, which has since rendered me such service."

surround, above the level of the ankles, the dried bandage with bandages composed of old handkerchiefs, intended to maintain the efficiency of the apparatus.

"A very useful precaution is, that when the bandage is exhausted the end should be folded or turned down on itself to a certain extent, and stuck so in a conspicuous part of the bandage, so that if it should be necessary to remove the apparatus, no difficulty should be experienced in finding the end of the bandage.

"Also, always take care to leave uncovered the ends of the fingers or toes, whose variations of colour and of temperature furnish you with a sufficiently just measure of the analogous changes of the other parts of the limb covered by the bandage. Does a suppurating wound, or one that we cannot prevent passing into suppuration, exist on the injured limb, either the turns of the bandage are so arranged, that the solution of continuity of the soft parts is not completely covered by them; the edges of it are either cut out or turned back and stuck so with the starch; the bandage is fully rolled round the wound of which it takes the impression, marked by the blood or pus, it is raised by means of bent scissors, or of a cutting nippers (*emporte piece*\*). One or several openings are cut in the central part, and as much as possible in the longitudinal direction; these openings should be large enough to allow a passage for the secretions, but not so large as to permit a protrusion and consecutive strangulation of the fleshy granulations.

"The compression made by the starch bandage ought never to reach, and especially in fractures, that degree of violent constriction that practitioners, as little familiarized with M. Seutin's method as with the general principles of compression, have believed to be necessary for the resolution or prevention of inflammation. A like error can only expose to a rapid disorganization, to accidents too often set down to the effects of the starch bandage, and which, in our opinion, ought rather to be attributed to the surgeon who does not judiciously regulate the application of a means so essentially useful in other hands. *Compression, as understood by M. Seutin, ought to stop at a gentle, methodical pressure, sufficient to moderate the afflux of blood, but not to stop it, a pressure which in many circumstances, at the instant of its application, is only retentive, and which never acts on the soft parts, so as to be able to induce mortification in their tissues, and even in fractures we frequently see the clinical professor apply the first layers of bandages, in a manner simply retentive; those which support the splints only make a slight degree of pressure, particularly near the seat of the fracture. In complicated fractures, we have often heard him repeat to his pupils, the express recommendation to employ only a very moderate com-*

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\* M. Seutin, has invented a scissors of a particular construction, for the purpose of slitting up the apparatus when dried, or cutting out such parts of it as may be necessary. Mr. Milliken, the cutler, of Grafton-street, has the pattern of it, and is making one by M. Seutin's direction.

pression, particularly the first few days, and even in severe cases to dispense with it completely, adding, that tissues lacerated, violently contused, or under the influence of a violent shock, would more than ever tend to disorganization, if in the period of reaction, the least exterior cause should join itself to their already dangerous tendency. In old men, wounded cathetic subjects, the precautions should be even yet more minute.

"Practice alone will tell to what degree compression must be carried or restricted; theory can only guess. It should always be made to act from the extremities to the centre, as evenly as possible, care being taken to avoid its immediate action on bony or tendinous prominences, or excrescences, &c. The filling up is formed by means of compresses, folded on themselves, or enclosing old linen, tow, charpie, wadding, cotton, &c.; they can also be formed of soft pieces of paste-board put one over the other, and fitted to the hollow that they are destined to fill. The starch keeps together the edges, or the opposed surface of the fillings up.

"The starch paste ought to be if possible freshly prepared, and without lumps. Starch lightly boiled (in an iron saucepan without the lid) has appeared to us to present all the advantages of dextrine, applied in the manner of M. Velpeau, without partaking the disadvantages that this substance presents. Like it, it dissolves in cold water, readily imbibes the bandages plunged into its solution; it is cheaper, and not so scarce, and does not make the bandages stick too closely together, so that when it is necessary to detach them they tear, if water has not penetrated all the layers of the bandage.

"Notwithstanding these qualities of boiled starch, M. Seutin nearly constantly employs the amylaceous fecula not boiled, which offers the great advantage of being met with every where, and not to demand much preliminary preparation. It is first diluted with cold water; then with boiling water, as is done by washerwomen. He prefers this simple solution, to that united to plaster, lime, alum, acetate of lead, Flanders' glue, &c. He also gives it the preference to the white of egg, or the composition of M. Larrey, to flour, fresh plaster, turpentine, isinglass, resin, pitch, the gums, the gum-resins, the different mixtures in which resin enters, either as base or as adjuvant. Comparative trials of these different substances have led to this choice. The starch paste can be spread by means of a brush, or of the hand. The brush is indicated, when every motion should be avoided, or when both hands of the surgeon should remain free and not sticky, while putting on the apparatus. If it is desirable in stiffening the bandage to use the hand, the hollow of the palm, covered with starch, is carried flat, successively from the bottom to the top, and *vice versa*; then circularly, so that the edges of the bandage overlapping each other may be first raised and starched, then flattened down again, and the inequalities effaced. A method of stiffening the bandage, as expeditious as commodious, and often employed by M. Seutin, consists in taking in the hollow of the hand a certain quantity of starch concreted by the cold; as the bandage is unrolled the surgeon makes it pass lightly

over this substance, from which it takes at each turn a portion, which makes its turns stick together, and to the planes either over or under it. A light compression of the bandage effaces the irregularities which the starch might present in its dissemination.

"Whatever plan is followed, we should carefully avoid to starch the inside of the layer of bandage immediately applied to the skin, in order not to expose this last to a rough contact, frequent source of smart itching. When the bandage is all applied, its surface is thinly starched. Care should be taken not to starch on the folds over joints, over bony prominences, or excrescences, nor on those edges of the bandage which may exercise any friction on the skin, and soon bring on excoriations, always disagreeable, often even very painful. The external layers of the apparatus should be freely starched.

"*Splints*.—Pasteboard is almost all that is necessary. It should offer sufficient resistance; a thickness of a line to a line and a half, but not to be too compact, so that water may readily penetrate it. If necessary, a portion of a hat box, book cover, &c., may be used instead. It is always better to tear it than cut it, so that the edges, which only end by degrees, may adapt themselves more uniformly to the convex surface of the limbs, that the bandage may act gradually on all the surface of the splint; and to avoid troublesome impressions on the skin, which the compression of the bandage on the too regular edges of the splint, that is made by cutting, never fails to induce. The shape of the splints is regulated according to the case. When the splint is fit for application, it is lightly moistened, by making it pass quickly through tepid water, or plunging it some minutes in cold water; in this manner, although flexible, the splint yet preserves a certain degree of firmness. It is accurately applied to the convex surface of the parts, by bending it slightly and longitudinally on itself, in several parts of its surface. Its power of being softened makes it readily adapted to the irregularities of the most unfavourable surfaces to which it is applied. In most cases, especially in fractures, the external surface of the splints alone is spread with the starch, which is spread on it in a thin layer. If it is thought expedient to increase the firmness of the splints, one is stuck over the other, after having moistened them separately.

"A precaution essentially useful is, to prepare beforehand splints of pasteboard, broad and long, to soften them a little in water, to cover them freely with starch on both surfaces, then to leave them to dry slowly in the open air. Pieces of pasteboard so prepared are called *attelles de precaution*. It is very useful for the surgeon always to have a certain quantity of these splints ready. When wanted, it is sufficient to proportion the length and breadth of them to the dimensions of the injured part; to soften them only a little, and if they are only just moistened, they can reinforce the last bandage with a solid cuirass, which, covered with a starch bandage, maintains the fracture fixed, during the period of the desiccation of the apparatus. Common splints of wood, tin, &c., may be used in the absence of these, particularly where there is a strong tendency to displacement on account

of muscular spasm. The drying of the starch bandage is generally accomplished in thirty or forty hours after its application. This period may be shortened by artificial means, such as stone jars filled with hot water, or bags full of hot sand placed the length of the apparatus; exposure to the heat of the sun, of a stove, &c. Unless from urgent circumstances, it will be prudent to dispense with them in cases of complicated fracture. Unless the patient complains of pain, or much uneasiness in the injured limb; and the surgeon does not entertain reasonable fears on the state of the soft parts, it is not generally, in fractures, from the second to the fourth day that the section of the starch bandage is made. It is done with a pair of scissors invented by M. Seutin for the purpose. The section having been made, the state of the parts is to be attentively examined, and our conduct is regulated by the indications afforded by this inspection. If the apparatus fulfils the views proposed, it is made secure again by a starched bandage. Does it exercise too powerful a general pressure? relax it by contriving a separation between the edges, a suitable interval which is to be covered with a little plate of pasteboard, well softened and applied on the skin. The exterior surface of the bandage is then smeared with a coating of starch, the borders of the valves being properly held by the assistants, who raise at the same time the limb; the apparatus is then surrounded by a starched bandage, very little compressive. Folds and plaits that press the skin irregularly are to be removed; the pieces that exercise injurious local impressions are to be wet slightly with water; pieces of lint are inserted when necessary, and then the whole is surrounded by the starch bandage, care being taken to make a daily inspection to see that all is right.

“If the apparatus appears defective in any particular, do not hesitate to remove it (after having wet it with tepid water), to replace it by another, less objectionable.

“However it be, the section of the bandage has always appeared to us to be preferable, on account of the little shaking which it communicates to the injured limb, of the facility which it leaves for its inspection, and to fulfil all the indications which may offer themselves to the examiner. Thus the longitudinal division being finished, if we remark an evident tendency to suppuration, or if the purulent secretion has already established itself; and that during the application of the apparatus, we have not made in the bandages narrow openings in the situation of the wound, to permit a passage to the secretions furnished by them, a measure which ought always to be followed when suppuration is inevitable, if a like precaution has not been taken, either we make, by means of a pointed scissors, of a bistoury, penknife, &c., one or two holes in the bandage in the site of the wounds, or we make with M. Seutin's scissors, from the longitudinal section, two transverse divisions in the starched case, one above, the other below the level of the wound, divisions which can be repeated on the other side in the case where the suppurating surface is covered by it also.

“With respect to allowing the patients to walk about, in the surgical injuries of the thoracic extremity the wounded do not in general

remain in bed, except in the case of some severe complication. In the pelvic extremity, it is only after the third day, in the majority of cases, that walking can be authorized, and that after the complete drying of the apparatus is assured, and that the section of the bandage has furnished satisfactory indications. In complicated fractures, and other violent lesions of the lower extremity, we wait for, before allowing it, the resolution of the first accidents.

"In the lesions of the pelvic extremity, walking ought always to be assisted by crutches, which are covered at their lower end with a piece of cloth to prevent their slipping; by a tarso-cervical suspensory, strong, and suitably tense, and, until the patient has acquired, in walking with crutches, the desirable habit and security, by a vigorous assistant who watches his steps, and supports him at the loins by raising the clothes there.

"*Regimen of fractured Patients.*—In simple fractures the regimen is not severe; the series of local antiphlogistics usually employed (emollient and discutient fomentations, leeches, poultices, &c.) is excluded. In compound fractures, it is confined, in the generality of cases, to increase the degree of elevation generally given to the injured limb, the body being subjected to the horizontal position, the head excepted; to a rigorous diet; to large general bleedings, cooling drinks, intestinal derivatives, and where continual irrigations of cold water were indicated, we have seen on two occasions M. Seutin apply bladders filled with ice, the length of the fractured part, surrounded with a starched bandage. The two patients were cured."

*Strabismus.*—At the present moment, when the operation for strabismus is exciting so much interest, the opinions of the eminent physiologist from whom we are about to quote, are entitled to the greatest respect.

"To one more point only, connected with the subject of strabismus, would the Author now allude. He is well convinced from repeated observations that those surgeons are in the right, who have maintained, in a recent controversy, that, in a large portion of cases, strabismus is caused by an affection of *both* sets of muscles or nerves and not of one only; and that it then requires for its perfect cure, the division of the corresponding muscle on both sides. Cases will be frequently met with, in which this is evident; the two eyes being employed to nearly the same extent, and the patient giving to both a slight inward direction, when desired to look straight forwards. In general, however, one eye usually looks straight forwards, whilst the other is greatly inverted, and the sight of the inverted eye is frequently affected to a considerable degree by disuse; so, that, when the patient voluntarily rotates it into its proper axis, his vision with it is far from being distinct. Some surgeons have maintained that the inverted eye is usually the only one in fault, and consider that the division of the tendon of its internal rectus is sufficient for the cure. They would even divide its other tendons, if the parallelism be not restored, rather than touch the eye. The Author

is himself satisfied, however, that the restriction of the abnormal state to a single eye, is the exception, and not the rule, in all but very slight cases of strabismus; and to this opinion he is led both by the consideration of the mode in which strabismus first takes place, and by the results of the operations which have come under his notice. If the eyes of an infant affected with cerebral disease be watched, there will be frequently observed in them, very irregular movements; the axes of the two being sometimes extremely convergent, and then very divergent. This irregularity is rarely or never seen to be confined to one eye. Now in a large proportion of cases of strabismus, the malady is a consequence of some cerebral affection, during infancy or childhood, which we can scarcely suppose to have affected one eye only. Again, in other instances we find the strabismus to have resulted from the constant direction of the eyes to very near objects, as in short-sighted persons; and here, too, the cause manifestly affects both. Now it is easy to understand, why one eye of the patient should *appear* to be in its natural position, whilst the other is greatly inverted. The cause of strabismus usually affects the two eyes somewhat unequally, so that one is much more inverted than the other. We will call the least inverted eye, A., and the other B. In the ordinary acts of vision, the patient will make most use of the least inverted eye, A., because he can most readily look straight forwards or outwards with it; but to bring it into the axis, or to rotate it outwards, necessitates a still more decided inversion of B. Thus remains the position of things, the patient usually looking straight forwards with A., which is the eye constantly employed for the purposes of vision, and frequently almost burying under the inner canthus the other eye, B., the vision in which is of very little use to him. When, therefore, the tendon of the internal rectus of B. is divided, the relative position of the two is not entirely rectified. Sometimes it appears to be so for a time, but the strabismus then begins to return, and it can only be checked by division of the tendon of the other eye, A.; after which, the cure is generally complete and permanent. That it has not been so in many of the cases in which operations have been performed, the Author attributes, without the slightest doubt in his own mind, to the neglect of the second operation. As just now stated, the sight of the most inverted eye is frequently very imperfect; indeed it is sometimes impaired to such an extent, that the patients speak of it as entirely useless. That this impairment results in part from disuse merely, seems very evident, from the great improvement which often succeeds the rectification of the axes. The Author cannot help thinking it probable, however, that the same cause which produced the distortion of the eye may, in some instances at least, have affected the optic nerve, as well as the motor nerves of the orbit; and this idea is borne out by the fact of the restoration of sight in certain cases of amaurosis, by division of one or more tendons, where no strabismus previously existed. (See Adams on Muscular Amaurosis). It is interesting to remark, that, in these cases, strabismus was usually the first effect of the operation; but that the eye

generally recovered its ordinary position within a short time, especially when the sight was improving."—*Principles of Human Physiology* by DR. CARPENTER.

*Nasal Polypus*.—Andrew Lawson, aged 47, a letter-sorter in the General Post-Office, was admitted into the hospital on the 23rd of April, recommended by Dr. Spittal. In the early part of the present year, he observed a growth in the left nostril, which gradually increased, obstructing the passage, and bleeding from time to time. It at length protruded externally, and on several occasions the hæmorrhage had been so copious, as to excite serious alarm. The tumour distended the nostril, had a brownish-red colour, with soft, friable consistence, and bled under the slightest touch.

I did not hesitate as to the nature of the disease, which was obviously malignant: and at once decided against attempting to effect removal by evulsion. The simple mucous, or non-malignant polypus, which is merely an excrescence from the lining membrane of the nostril, may in general be easily and effectually extirpated by the forceps, if they are properly constructed and applied. But the vascular pulpy growths which originate from the osseous texture, do not admit of complete eradication, except by taking away the bone from which they spring; and as the part affected is usually inaccessible, from engaging the ethmoidal or sphenoidal cells, it is hardly ever possible to effect this. The only prudent course, therefore, in such melancholy cases, is to abstain from interference; especially, as even clearing the nostrils, with the view of temporary palliation, has in some instances proved fatal, by exciting inflammation of the parts within the cranium.

The patient accordingly, after having had the projecting portion of the tumour cut off, was informed that nothing more could be done for his relief, and left the hospitable as incurable. He soon afterwards returned to say that the bleeding had increased, and that for the sake of his family he was willing to suffer any operation that afforded the slightest prospect of escape from the certain destruction which plainly awaited him if the disease were permitted to proceed. A careful re-examination confirmed the opinion already formed as to the nature of his complaint, but led me to notice some circumstances favourable for the attempt he desired. Though the nostril was dilated, the root of the nose and nasal bones did not show the slightest appearance of enlargement; there was no pain or uneasy feeling in the region of the frontal sinuses; the eyes were natural as to position and vision; the morbid growth was confined to one nostril; and it seemed to be connected with the walls of the cavity near the external orifice. As there thus appeared reason to conclude that the upper part of the nose was unaffected, and that the disease originated from the inferior spongy bone, or some other accessible portion of the parietes, I resolved to try what could be done for the poor man's relief.

An incision was made through the upper lip, from the nostril downwards to the mouth, and the flaps were then separated on each

side from the gum, so as to afford free space for examining the attachment of the tumour. It then appeared that the growth proceeded from the septum, by a narrow neck not larger than a fourpenny piece, immediately above the connexion of the cartilage to the bone, and that there was consequently no difficulty in completely rooting out the disease. I cut through the septum a little way above the lower margin, so as not to interfere with the *columna*, divided the bone with pliers, and separated the remaining cartilaginous attachments. The surfaces of the wound were then brought together, after torsion of the coronary arteries, and retained by stitches of the interrupted and twisted suture. In the course of a few days, there was hardly any perceptible trace of the operation, and the patient has since continued perfectly well.

This case shows how careful we should be before condemning a patient as incurable; it also affords an example of malignant disease in the nasal cavity, originating from a very unusual source; and it proves the advantage of gaining additional freedom of access to the nostril, by dividing the lip, instead of cutting through the *columna*, or slitting open the *ala*, neither of which modes would have afforded so much space, or probably left so little deformity. In a case related in the *Edinburgh Medical and Surgical Journal* for 1834, I laid the nostril open in the last mentioned way, to obtain sufficient room for extracting a large fibrous polypus which projected both externally and into the pharynx, but did not succeed. Afterwards, when the symptoms had become much more urgent, I removed the superior maxillary bone, as the only means of relieving the patient from the disease. The morbid growth for which this severe operation was undertaken, is fortunately of very rare occurrence. It is distinguished by firmness, or tenacity of structure, resembling that of the ligamentous textures, strong and extensive adhesions to the surface of the bones composing the nasal cavity, and tendency to bleed, causing frequent and profuse epistaxis. In 1840, M. Flaubert of Rouen\* removed the superior maxillary bone, for the detachment of a fibrous polypus, apparently under the impression that this proceeding had no precedent. And in a letter lately received from Professor Mott of New York, I learn that he is about to publish the details of a case in which he successfully cut out the greater part of the superior maxillary bone with the same view.

In all of these cases, the bone was perfectly sound in its substance, and was removed merely to afford room for separating the tumours; they are consequently very different from the ordinary affection of a malignant nature, in which the growth springs from the interstices of the bone, and except in such very peculiar circumstances, as those of the patient whose case has led to these remarks, does not admit of any beneficial operation.—*Professor Symes, in London and Edinburgh Medical Journal.*

*Two Cases of Apoplexy, attended with unusual Lesions*, by John Adamson, Esq., Surgeon, St. Andrew's.—**CASE I.**—The patient was a man, aged 36, of robust constitution, but of dissipated habits. According to the statement of his wife he came home very drunk about 12 at night, Jan. 7, 1838; and, as was his habit on similar occasions, he refused to go to bed, but sat down in a chair with his head leaning on his knees, and fell into a profound sleep. Early in the morning, viz. 4 A. M., she noticed that he did not breathe, and on examination he was found still sitting in his original posture, but quite dead.

*Dissection.*—On removing the skull-cap, a clot of blood, apparently about two or three ounces, was found lying on the left hemisphere of the brain, under the dura mater. In connexion with its lower edge there was a small ragged opening into the left lateral sinus, in that portion which lies on the inferior angle of the parietal bone, from which the blood appeared to have escaped. On examining the sinus at this part, it was found to exhibit a congenital imperfection of its dura-mater covering, which, on the cerebral side, consisted merely of a few bands crossing the thinner internal coat, thus leaving the intervening portions unprotected and weak, compared with the ordinary state of this vessel; it was in one of these portions where the rupture had occurred.

**CASE II.**—A gentleman, aged 60, had been liable for some months to attacks of headach and giddiness, without other complaints. On Monday, Nov. 14, 1841, he experienced a sudden recurrence of these symptoms while on his way to church, which caused him to stagger a little on the street, but did not prevent him from going on, as he recovered in a few minutes. During the service he was noticed to be insensible, though still sitting upright in his pew, and he was immediately carried out to the open air. Here he again recovered so far as to imagine that he had only had a fainting fit, and that there was not much the matter. In the evening his pulse was feeble and rapid, he hesitated a little in his speech, and complained of a feeling of numbness and weakness over his whole body; these symptoms continued with little increase until the night of the 16th, when they were suddenly much aggravated. He now presented a remarkable appearance; his limbs lay perfectly powerless and motionless, his jaw had fallen, leaving his mouth wide open, his tongue was retracted and immoveable, his breathing highly stertorous and intermitting; yet he retained his intelligence, with the senses of sight and hearing. This was discovered after a time by the expressions and motions of his eyes, and on being asked to make affirmation by winking, he in this manner readily answered all the questions which were put to him. The only motions he was observed to make after this time, except of the eyes, eyelids, eyebrows, and in respiration, were a slight jerk of the right arm when it was pricked with a lancet, and several yawns after eight or ten ounces of blood had flowed from the vein. He continued in the above-described state about twenty-four hours, when his eyes

gradually became dim and fixed, his breathing becoming more and more interrupted, and his pulse, which had been throughout weak, and beating from 100 to 120 times in a minute, more feeble and rapid; he died on the 18th at 9 P. M.

*Dissection.*—The body was examined on the 21st in presence of Dr. Mudie, Dr. John Reid, &c. It was rather corpulent; the organs of the abdomen and thorax were healthy; the vessels on the surface of the brain were full of blood, the arachnoid slightly thickened on the anterior lobes; the convolutions of anterior lobes were slightly atrophied; there was slight effusion of serum under the arachnoid between the atrophied convolutions; the substance of the brain was normal,—red spots were perhaps rather more numerous than usual; about two drachms of liquid were found in the lateral ventricles; the substance of the cerebellum was perfectly normal; the parts at the base of the brain were of the usual appearance in every part, except the basilar and right vertebral arteries, which were not collapsed, but appeared like round, firm cords. When removed from the brain and cut open, the basilar artery was seen to be obstructed in its whole length, and the right vertebral to the extent of nearly an inch. The internal membrane of the basilar was much ruptured and corrugated, but the obstruction was chiefly caused by a very firm clot of blood lying under the internal coat on one side, thus pushing it forward so as to fill up the vessel. The blood appeared to have penetrated backwards, i. e. from the carotids to the vertebrae, as the right vertebral was obstructed solely by the separation of its coats, as above described, without any rupture.

*Remarks on CASE II.*—The more remarkable phenomena of this case are, the apparent integrity of the functions of the cerebrum, and of at least two of the nerves of special sensation, while common sensation was cut off from probably the whole body, and volition only remained connected with so small a portion of it, as the muscles necessary for the observed motions of the eyeball and eyelids. These phenomena seem to be fairly enough attributable to the arrestment of the flow of blood in the arteries of the cerebellum, tuber annulare, and portion of the medulla oblongata, consequent on the sudden obstruction of the basilar and right vertebral arteries.—*London and Edinburgh Medical Journal.*

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*On the Influence that Diseases of the respiratory Organs have on Menstruation, and the Effect that that Evacuation exercises on these Affections,* by Dr. Raciborsky.—The following are the conclusions to which the author comes in regard to the effect of acute pulmonary disease on menstruation, and of that discharge on it:

1st. That acute inflammation of the respiratory organs, in general, has no effect on the menstruation, and that in the majority of cases the catamenia appear as usual, at the commencement of these diseases.

2nd. In the cases in which inflammation attacks the chest, shortly

after the menstrual period, the catamenia may be altogether wanting at the next period, or if they do appear, be much diminished in quantity; but that this result ought not to be attributed to the disease, but to the blood-letting and low diet which have been had recourse to. The same is seen in all those affections in which a similar treatment has been pursued.

3rd. When menstruation occurs during an inflammatory attack of the chest, it has no effect on that disease, and consequently we should not endeavour to promote or hasten the return of the menses, with a view of alleviating that complaint. Some authors, it is true, and particularly Forestus,\* and more recently M. Andral,† have cited cases, in which inflammation of the respiratory organs terminated favourably, immediately on the appearance of uterine hemorrhage. But as M. Andral remarks, we must be careful not to confound this uterine hemorrhage, which is really a critical discharge, with the true menstrual fluid, for which it has often been taken, as having had great influence in different diseases.

4th. That the suppression of the menses, which has been occasioned from bleeding in acute inflammatory diseases of the chest, has never been followed by any bad result, and that consequently, the presence of the catamenial fluid ought never to be any contra-indication to venesection when it is thought necessary.

The effect of chronic pulmonary complaints, as phthisis, emphysema, and chronic catarrh, on menstruation, is very different. In the first of these diseases, amenorrhœa is almost always produced,‡ whilst in affections purely catarrhal, it seldom or never takes place. This distinctive character may serve as a means of diagnosis in those cases in which the physical signs are insufficient to decide the question.—Abridged from *Gazette Méd. de Paris*, 25th June, 1842, and *London and Edinburgh Medical Journal*.

LUBANISKI on the *Urine of Pregnant Women*.—It is seldom as acid as in other individuals, occasionally it is neutral, and sometimes alkaline, and generally light-coloured. Donnè suspected that the salts of lime for the most part are diminished during pregnancy, and that a part of them is taken to supply the materials for the formation of the foetal bone; and he found in many experiments instituted for this purpose, that by the addition of thirty parts of hydro-chloride of lime to fifty parts of urine, there was a precipitate of from forty to fifty parts of salt of lime in common urine, whereas in that of pregnancy, the most he ever detected was thirty, and very often not near so much. Before making the experiment, the urine to be tried must

\* Lib. i. obs. xx. et lib. xvi. obs. xxxv. † Clin. Méd. 3rd edit. tom. iv. p. 417.

‡ Our fellow-citizen, Dr. Montgomery, has shown, that the suppression of the catamenia, which occurs in phthisis, is in the majority of cases owing to an actual change in the uterus itself. This organ he has observed to undergo a remarkable atrophy, presenting, in some instances, a mere trace of its original condition. Dr. Montgomery illustrated his views by many specimens which he exhibited at the Pathological Society last winter.—ED.

be tested, to ascertain if it be alkaline or acid, and if acid, a few drops of ammonia must be added to render it alkaline, since the precipitate from phosphate of lime is soluble in weak acids. If the experiment be made with solution of baryta, there will be in healthy urine a precipitate of from twelve to fifteen parts of salts of baryta; in the pregnant from five to eight, after twelve hours' rest. With reference to the question of pregnancy, Donnè has, out of thirty-six cases, only twice been deceived. Lubanski found it decisive in three cases of pregnancy, where manual examination and auscultation proved unavailing. He proposes the following questions for investigation. 1. At what period of pregnancy does this diminution of the salts of lime take place? 2. Is it always constant? 3. In what relation does it stand to the increase of foetal ossification? 4. At what period does it cease?—*Ann. d'Obstetrique des Maladies des Femmes et des Enfants*,—1842.

MALGAIGNE's *Statistical Review of Luxations*, taken from the registry of the Hôtel Dieu Hospital, where the number of dislocations admitted during sixteen years amounted to 530.

1. Comparative frequency of luxations in the different months. From December to March, 204; from April to July, 150; from August to November, 176. (The cases of fractures were in the same proportion).

2. Comparative frequency in the different ages:—

From 2 to 5 years,	1 disloc.	From 45 to 50 years,	51 disloc.
5 to 10	4	50 to 55	52
10 to 15	8	55 to 60	51
15 to 20	29	60 to 65	51
20 to 25	32	65 to 70	42
25 to 30	40	70 to 75	19
30 to 35	48	75 to 80	13
35 to 40	38	80 to 90	4
40 to 45	45	90	1

3. Frequency of luxations in the different ages during summer and winter. From 2 years to 25 years, most cases occurred in summer; from 25 to 45, most in winter; from 45 to 55, one-third more than in summer; from 55, about one-half more.

4. Frequency of cases in the different sexes: 395 males, 135 females.

5. Frequency of cases in different ages in both sexes. In childhood and advanced age numbers were equal.

6. Frequency of cases in the right and left side (where the side was known); fifty times in the right, and thirty-nine in the left side.

7. Frequency of cases in the joints, in 491 cases, as follows:—  
 Humerus, 321. Clavicle, 33. Ulna, 26. Radius, 4.  
 Carpus, 13. Thumb, 17. Fingers, 7. Femur, 34.  
 Patella, 2. Foot, 20. Inferior maxilla, 7. Vertebrae, 1.  
 Knee, 6.

8. Influence of age in each particular luxation. The frequency of luxations of the shoulder was, in proportion from 2 to 15 years, as

: to 4; from 60 years, as 1 to 1 and a-half. Luxations of the clavicle were almost all confined to adults; those of the ulna were confined to the young; half the cases were from 10 to 20 years; from 54 upwards, not one case. Out of sixty-seven luxations of the thumb, twelve occurred in winter, five in summer; sixteen in males, and one in female; from 30 to 40 years they are most frequent. Of thirty-four luxations of the femur, eighteen occurred in winter, sixteen in summer; twenty-six in men, eight in females: they were most frequent in adult age.—*Gazette Medicale de Paris*, 4th February, 1842.

*Cure of Hydrocele by Electro-acupuncture.*—Zenobi Pechioli details a case of this disease, in which he employed the above-mentioned remedy. The patient was a strong healthy young man, and laboured under a double hydrocele of three years' standing, which had resisted the usual methods of treatment. On the 30th of May, two needles were inserted, one into the upper, and the other into the under part of the tumour. These were connected to opposite poles of a voltaic pile, and the electric fluid was passed in a continued current for five minutes, when it had to be discontinued, in consequence of the right testicle becoming painful. Five minutes after the removal of the needles, both hydroceles disappeared completely. In the evening, redness and heat of the scrotum occurred, the parts were moist from perspiration, and the right side of the scrotum became œdematous. The operation was repeated on the 9th of June, and was followed by a similar result. On the 18th it was again resorted to, and since then he has had no return of the hydrocele. Pechioli considers that the openings made by the common mode of acupuncture are too small to allow the fluid to escape, and thinks, that by passing a current of electricity through the hydrocele, the contained fluid is forced out through the sac into the cellular tissue of the scrotum, whence it is removed by absorption.—*Bullet. delle Scienze Medicin di Bologna*, Sept. 1841.

*Pneumatosis of the Bladder.*—Dr. Scheidner, of Iddo, has recorded a case of this curious disease, occurring in an old officer. The air was secreted in the urinary bladder and expelled by the urethra without pain or uneasiness. It was evidently a secretion of the mucous membrane, which, in addition, furnished an unusual amount of mucus. Aromatics and aromatic baths were employed with tincturæ opii, intermediately, and with success.

A second case was observed by Dr. Schneider, in a young man labouring under fistula in perineo, after syphilis, but in this case it probably resulted from decomposed urine.

A third case occurred in a female, aged sixty; the gas was extremely foetid, and the disease appeared to result from errors in diet. Dr. Schneider succeeded in curing the patient by means of powdered charcoal of linden wood, of which he gave a drachm four times a day.

Dr. S. quotes a fourth case from Alf. Sczerlecki.—*Hufeland's Journal*, Sept. 1841.

*Liq. Kali Carbonici, a Remedy for Poisoning with White Arsenic.*—Dr. Emsmann, of Eckartsberge, was called to a young woman who had been poisoned by means of white arsenic. She was in great pain, was vomiting, purging, and suffering great thirst, &c. He gave, every half hour, a spoonful of a mixture compound of half an ounce of the *liq. kali carb.* in two ounces of *syr. althææ*. The effect was immediate, the vomiting ceased, the pain was relieved, and the other symptoms gradually disappeared.—*Ibid.* Oct. 1841.

*Cases of Fracture.*—Dr. Bomhard Ritter has published some remarkable cases of fracture, in Hufeland's Journal :

The first was a case of a highly hysterical young woman who fractured the forearm by a fall from a carriage. After the fracture had been carefully put up, the patient was repeatedly attacked by hysterical paroxysms, during which the opposing surfaces of the fracture became displaced, and so much injury resulted, that the patient died on the third day.

The second case was of a man, upwards of sixty years old, who fell from a height upon the ground. The head of the humerus was both fractured and luxated. The luxation was reduced, and the fractured parts maintained in apposition, and rest enjoined. After six weeks the bandages were removed, and by degrees the patient recovered the use of his arm and was able to return to his work.

The third case is one of comminuted fracture of both bones of the leg, in which, by means of extension, and counter extension, and careful bandaging, the fractured portions of the bones were reduced, and after some time united, so that the patient recovered the use of the limb.—*Rust's Magazine*, 1841.

*M. Dumas on the Chemistry of Organised Beings.*—It appears that MM. Dumas and Boussingault, in France, have been following out nearly the same pursuits in Organic Chemistry, as Professor Liebig has been doing in Germany. It is immaterial to us to whom the priority belongs; the important point for science is, that these gentlemen have arrived at very similar conclusions.

From a recently published memoir of M. Dumas, we shall select a few passages that bear more immediately on the physiology of plants and animals.

"We have," says he, "considered *plants* as constituting an immense reducing or decomposing apparatus, that is nourished by carbon, hydrogen, and nitrogen—derived from the decomposition of carbonic acid, water, and oxide of ammonium—and *animals* as forming a large consuming apparatus, in which there is constantly going on the combustion of these elements, carbon, hydrogen, and ammonium, to form these very compounds.

"We have laid it down as a recognized principle that plants form, or prepare, from mineral substances the organic materials of their composition, that these materials are taken into the bodies of animals, are there subjected to the process of digestion, thus become

animalized, and are subsequently again brought back by a vital process to the state of mineral and inorganic matter.

"As accessory results of our researches, we may state that some plants absorb a certain portion of nitrogen from the atmosphere, while others do not; that animal heat is owing solely to respiration; that the chemical process of this function (respiration) takes place not in the lungs but in the capillary vessels of the whole body; that digestion affects two important results, viz. the assimilation of azotized matters, and the restitution of combustible matters to the blood."

M. Dumas then discusses at considerable length the striking effects of ammonia in promoting vegetation: this seems to be the potent agent in most manures. Hence whatever tends to assist the formation of this substance, or to render it more fixed and abiding, is found to increase the valuable properties of manures. The addition of a solution of sulphate of iron, or of weak sulphuric acid, has this effect, and has been found to add greatly to the fertilizing properties of these matters. A sulphate of ammonia is formed, and remains fixed; the salt being not volatile like its alkaline basis.

With respect to the much vexed question, as to the source of animal heat, it seems to be the opinion of M. Dumas, that during each act of respiration a certain portion of oxygen is absorbed directly into the blood, and a certain portion of carbonic acid—already formed and existing in the blood—displaced and evolved. There is no direct union or combustion, so to speak, of hydrogen or carbon with oxygen in the lungs, as imagined by Lavoisier and Laplace; the formation of the carbonic acid seems to be a slow and successive act that is constantly going on in the minute blood-vessels; and the venous blood, when it reaches the right side of the heart, is already charged with it, and ready to give it off when exposed to the air in the cells of the lungs.

It is necessary to keep in mind that the production of animal heat, the exhalation of carbonic acid into, and the disappearance of oxygen from, the respired air are three separate phenomena—connected, indeed, the one with the other, but not implying that they are of simultaneous occurrence. Or we may express our meaning in different words, thus: the generation of animal heat, the decarbonization, and the subsequent arterialization, of the blood, are three mutually-associated, but not coincident phenomena. The blood becomes arterialized without any necessary production of heat at the time: and the gradual formation of carbonic acid—an act which is necessarily attended with the evolution of caloric—is going on in every capillary vessel throughout the body.

"Respiration," says our author, "introduces the oxygen into the blood and renders it of a bright red colour; carbonic acid is at the same time expelled from it.

*"L'oxygene absorbé sert à bruler du lactate de soude, et en general des sels de soude. L'acide lactique transforme celui-ci en lactate et degage acide carbonique. Cet acide lactique provient des alimens sucrés ou amylacés."*

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"The fatty matters also form salts with the soda of the blood. When they are in excess, they become deposited around the vessels through which they have exuded, and, by being blended with the albuminous fluids in a state of repose, they serve for the production of adipose cellules or vesicles, and the animal becomes fat—in other words, it lays up a supply of combustible matter. When the organized materials of the blood are consumed (*brulées*) without being replaced, the vital fluid becomes more decidedly alkaline and begins to react upon the adipose vesicles which surround the vessels; the fat and albumen of the cellules is re-dissolved and absorbed by the blood, and the animal becomes emaciated—in other words it consumes the combustible matter which had been stored up at a former time."

M. Dumas closes his remarks on this subject by pointing out the difference in the various kinds of food, according to their mode of action on the system and the changes they undergo during digestion and assimilation. He arranges them in three classes:—

1. Aliments of assimilation—viz. fibrine, albumen, and caseum: these are all of a highly azotized nature.

2. Soluble non-azotized aliments of respiration: such as starch, sugar, acid, or acidifiable substances, &c., which at once undergo combustion in presence of the soda in the blood; hence the production of heat manifested from the very commencement of their digestion.

3. Aliments of respiration, insoluble, and therefore capable of being stored up in the body, viz. various kinds of fatty matter."—*Annales de Chimie*.

We may here insert a paragraph or two from M. Liebig's lecture on the different kinds of food:

"Another most interesting result of M. Liebig's researches is that vegetable albumen, fibrine, and caseine not only have the same properties as the corresponding elements derived from animal matters, but also exhibit their azote and carbon in the same relations to each other. Thus chemical analysis shows us that herbivorous animals find the constituent materials of their blood, their albumen and their fibrine, already prepared in plants; and that the juice of plants, the vegetable albumen, the farina of wheat and of other *cereal*ia contain the principle of muscular fibre, while lentiles, peas and beans, contain the same azotized substance that is present in milk. They (herbivorous animals) live upon the flesh, blood, and cheese supplied them by plants; while, on the other hand, their flesh and blood serve for food to the carnivorous tribe. There is thus a complete identity between the azotized principles existing in vegetables and those in animal substances. Their chemical properties are alike; for we find vegetable albumen, obtained by boiling the juice of plants, and freed from all fatty and colouring matter by means of ether and alcohol, can scarcely be distinguished from the white of eggs."—*Allgemeine Zeitung. Med. Chirur. Review*.

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*Physiological Laws or Maxims*.—A second edition of Baron Michel's Translation of Professor Mojon's 'Physiological Laws,'—

a work which, on its first appearance in Italy, received the high commendation of *Scarpa*, *Mascagni*, *Tommassini* and *Borda*—has been published a few months ago in Paris. That our readers may judge for themselves of its contents, we have selected the following “Laws” on the important functions of Digestion, Circulation, and Respiration. They are correct as far as they go, but are very far from exhausting the subjects of which they are intended to give a condensed summary.

A useful work might certainly be got up by making Professor *Mojon*’s one the basis on which to build a series of more extended remarks.

*On Digestion.*—1. The existence of a central organ for digestion is one of the most essential characters of animal life.

(This is certainly a distinctive feature of animals—the existence of a central sac for the admission and digestion of the food. The very lowest of the Zoophyte tribe have it; and indeed the whole body of these creatures is little else but a stomach provided with a single opening. No plant, as far as we know, is similarly organized; their food seems to be invariably absorbed by the minute vessels of their extremities, and is never received into one single cell or sac.)

2. Every animal requires, for its sustenance, to introduce into its digestive organ, at certain intervals, some substance capable of affording nourishment to it.

3. For any substance to be fitted for the nourishment of animals, it is necessary that it should be of an organized structure itself, that it be soluble in the juices of the stomach, and capable of furnishing the elements of chyle.

(We here observe another important mark of distinction between animal and vegetable life; the one requires matter which has been already organized for its food, while the other derives its nourishment exclusively (perhaps) from inorganic matter.

One great end, therefore, served by plants, in the wonderful economy of the creation seems to be to transmute and prepare the materials of the earth as food for animals. We know of no mineral or unorganized substance that any animal can live upon. We read, indeed, of savages eating clay and earth; but then this is merely to satisfy the cravings of hunger, when they cannot procure regular food. or it is the effect of a diseased appetite, such, indeed, as we not unfrequently meet with in some cases of chlorosis. On the other hand, matter must always (probably) be in an inorganic condition to serve as food for vegetables. It may be imagined that, in some instances, as in that of the *Dioncæa Muscicapa* or Venus’ fly-trap, plants seem to derive their nourishment from animal substances; but this is very doubtful. It is more than probable, that these very substances must first be decomposed into their elementary constituents before they can be used as materials for nourishment to the plant. This then seems to be the series of changes undergone by matter: the earth, the air, and the water are absorbed by plants, and serve as food to them; by the wonderful chemistry of vital action, they are subse-

quently transmuted into the various products of vegetable life: these products supply the food of the greater number of animals, and these, again, become the prey of other animals, which are carnivorous. All the excretions of animals are already inorganic matters, and even their bodies, when left to slow decay, are gradually dissolved into a few elements, which belong to the mineral kingdom).

4. Food cannot nourish or repair the waste of the body, until after it has undergone the action of the digestive process, and its materials become assimilated to those of the body itself.

(We cannot wonder much at this, when we consider that no mineral substance agrees in its composition with any vegetable substance, nor yet any vegetable substance in every respect with one that is animal. Some vegetable and animal substances, indeed, are very nearly alike in their composition; they consist of the same elements, but then these elements are combined in different proportions. Even in the mineral kingdom we find that a somewhat analogous law exists. All the atoms of a crystal, for example, are essentially and entirely alike; and never do we find the particles of a different arrangement—although their elements be the same—combined together in a regularly formed salt).

5. Vegetable substances require a much more laborious digestion on the part of the stomach and bowels, to fit them for nourishment than animal substances.

(This is what we might expect; vegetable substances approach much nearer to the constitution of mineral inorganic matter than animal substances do, and we may therefore, *a priori*, suppose that they must undergo a greater change before they can be assimilated with animal bodies. Hence we find that the digestive canal in the herbivora is of much greater length than it is in the carnivora).

6. Substances which are entirely destitute of azote,—such as oil, gum, sugar, &c.—cannot by themselves serve as food for animals, at least for those which are carnivorous.

(Every one has heard of the experiments of Majendi on this subject: the animals, when fed with these substances alone, quickly pined, and died of atrophy).

7. Before any animal substance can be digested, it must have lost its vitality.

(The same may be said of vegetable substances. Indeed the very nature of digestion implies a complete separation of the component parts of any substance that is used for food. Milk is, perhaps, the article that undergoes least change; and it is well known how nearly this fluid approaches in its characters and composition to chyle).

8. Animals that are fed with farinaceous and other vegetable substances, are generally much fatter than those which live upon flesh.

(The chemical composition of all fatty matter approaches much nearer to that of vegetable substances than other parts of animal bodies. It contains a very large proportion of carbon and very little azote; whereas muscular fibre contains much less of the former, and more of the latter, element).

9. All hoofed and horned animals are herbivorous.

10. The sensations of hunger and thirst are felt whenever the stomach is empty. They are more imperious in youth than in age,—because the body requires more food in early years for its growth—and in all animals that have much exercise than in those which are inactive.

11. External cold and every other influence which quickens the digestive functions, render hunger more intense. In the same manner, whatever induces a great loss of the fluids, increases the desire for drink.

(The ingenious views of the celebrated German chemist, *Liebig*—fully detailed in the present number of this Journal—on the influence of cold air, &c. on the powers of digestion in men and animals, should be attentively studied. He points out with great skill the intimate connexion that exists between the respiratory and the digestive functions, and the beautiful adaptation of the food in different climates to the desires and wants of the resident animals. This is a most interesting chapter in the harmony of animal life, which had never before been so satisfactorily investigated).

12. Heat, rest, strong mental emotions, the sight, or even the mere remembrance of any disgusting object, constipation of the bowels, &c. diminish the keenness of hunger. On the other hand, prolonged hunger speedily enfeebles not only the muscular strength, but also the heat of the body, and the vigour of the intellectual powers.

(On the much vexed topic of the cause of animal heat, we must again refer to M. *Liebig's* work. This distinguished writer advocates the chemical doctrine as to the cause of this vital function, and in the course of his disquisition he shews with great force the influence of the food that is used, and of the atmospheric conditions in which the animal is placed, on the development of the heat of the body).

13. An animal, in a state of nature, is always led by its appetite to select the food that is best fitted for its sustenance. There exists a constant relation between the kind of the aliments on which the animal lives, and the peculiar dispositions of its gastric system.

14. The form of the teeth has a considerable influence on the digestion of the substances which the animal can subject to mastication.

15. The eruption of the teeth in the child takes place between the first and the fourth years. Usually they are pushed out in pairs, to the number of four-and-twenty in all. From the sixth to the seventh year, the sixteen milk or caducous teeth are successively replaced by others, so that the entire number of permanent teeth amounts to 30 or 32. The milk teeth generally drop out in the order of their eruption from the gums.

16. The configuration and arrangement of the teeth vary much in different animals, according to the sort of food they live upon.

17. In carnivorous animals the teeth are strong, curved, and pointed, for the purpose of tearing and dividing the flesh on which they feed. In the frugivorous tribe they are sharp, flattened, and so arranged as to cut and grind the substances placed between them. In the herbivorous and granivorous tribes, they have a cuboid form,

and are adapted to bruise the food by their broad uneven surfaces. In man, who is omnivorous, we observe these various forms combined together.

18. The chyme, as it is formed in the stomach, passes through the pylorus into the duodenum, where it is mixed with the bile, pancreatic and intestinal juices, and is gradually separated into chyle and feculent matter.

19. The strength of the walls of the stomach is in general inversely as the development of the masticatory organs, and the facility with which the food is digested. The solvent power of the gastric juice is also inversely as the amount or degree of the other forces which assist in the digestion of the food. The gastric juice in carnivorous animals is very different from that in the herbivorous.

20. In animals which hybernate during winter, the process of digestion is altogether suspended during the whole period of their lethargy.

21. The bile in the duodenum combines with the pancreatic liquor and mixes with the chymous pap. These three substances become mutually decomposed. The most soluble and nutritive portion of the chyme unites with a portion of the biliary and pancreatic juices to form the chyle, while another portion of the bile combines with the excrementitious part of the food, which traverses the intestinal canal, loses its chylous juice, and is at length voided as excrement.

22. The irritability and sensibility of the intestinal tube diminish gradually from the stomach downwards to the rectum.

23. The form and nature of the excrementitious matters are nearly alike in different animals of the same species, although they be fed on very different substances; while in animals of different species, but fed with the same food, the fæces have always a distinctive character in each tribe.—*Medico-Chirurg. Review.*

*Further Observations on the Variolæ Vaccinæ; with coloured Engravings*, by Mr. CEELY.—It would not be easy to overrate the importance of these investigations, conducted as they have been with a philosophical discrimination and care that are worthy of all imitation; we shall, therefore, without preface, endeavour to present our readers with as full an abstract as we are capable of laying before them.

*Cases of variolæ vaccinæ occurring in cows and milkers.*—Having received information (in October, 1840), that the tenant of a farm in the village of Oakley, situated at the extreme and n.w. end of the Vale of Aylesbury, had two ruptured vaccine vesicles, caught whilst milking his own cows, some of which he knew were affected with the same disease, Mr. Ceely hastened to the spot in order to inquire minutely into the circumstances. The ruptured vesicles on the hand of the patient (Mr. Pollard, æt. 56, who had never had smallpox or vaccine), were apparently between the second and third week of the disease. The cows were ten in number, eight milch cows and two sturks. On two of the milch cows there were vestiges on each of

not fewer than twenty-five to thirty vaccine vesicles on the teats, and the remains of one on each udder. Two others presented about half that number; and on the fifth there was evidence of only one vesicle on the under part of the teat, which being out of the way of the milker was completely desiccated and entire, forming a characteristic, blackish-brown, oval crust. This crust and two on the udders of the other cows just mentioned were the only perfect ones observed. On the teats all the imperfect crusts had been removed by the manipulations of the milkers, and their places were occupied by florid ulcerations, many of which were manifestly depressed in the centre, and *all* surrounded by the more or less circumscribed, indurated, and elevated integumental boundary which marks the vaccine disease. On the udder of one of the affected milch cows was observed an abundance of the sub-epidermic vesicles or bullæ, which not unfrequently arise during the acme and after the decline of the vaccine disease. The remaining three milch cows had perfectly escaped, and so had one of the sturks; but the other, which proved to be in calf, had several dark-brown crusts on the teats. Another milker was also affected, as will be noticed presently.

Mr. Pollard, the proprietor of the cows, spontaneously stated it to be his opinion that the animals had been infected from human smallpox effluvia, and the investigations instituted into this very important point brought to light the following circumstances. It was known that smallpox had been casually introduced into the village where this farm was situated about the commencement of the preceding June, but being promptly met by vaccination, only twelve cases occurred up to the time when the cows exhibited their disease. The last three cases were a woman, aged forty, who had been satisfactorily inoculated in infancy by the celebrated Sutton, a young child, and a woman rather beyond the middle period of life. The cottages in which they resided during their illness were situated on each side of, and closely connected with, a long, narrow meadow, comprising scarcely two acres. The first-named patient, though thickly covered with pustules, was not confined to bed after the full development of the eruption; but frequently crossed the meadow to visit the other patients, the woman, and child, the former of whom had the disease in its malignant and confluent form, and who died on the 7th September, and was buried the next day.

"On the following day the wearing apparel of the deceased, bed-clothes, bedding, &c. of both patients were exposed for purification on the hedges bounding the close; the chaff of the child's bed was thrown into the ditch; and the flock of the deceased woman's bed was strewed about on the grass within the close, where it was exposed and turned every night and for several hours during the day, till the 13th September—seven days. On that day the above-mentioned eight milch cows and two sturks were turned into this meadow to graze. They entered it every morning for this purpose, and were driven from it every afternoon to be transferred to a distant meadow to be watered and milked, where they remained during the night.

Whenever the cows quitted the meadow in question in the afternoon the infected articles above mentioned were again exposed upon the hedges, and the flock of the bed spread out on the grass and repeatedly turned, where it remained until the morning, when the cows were re-admitted. It appears, however, that the removal of the infected articles was not always accomplished so punctually as had been enjoined; for both the proprietors and the milkers affirm that on one occasion, at least, they observed the bed-flock on the grass, and the cows amidst it, and licking it up. The proprietor positively declares, and the milkers corroborate his statement, that the animals were in perfect health on their first entering this close; but within twelve or fourteen days of that event five of the milch cows appeared to have heat and tenderness of the teats, upon which, imbedded in the skin, were distinctly felt small, hard pimples, which daily increased in magnitude and tenderness, and in a week or ten days rose into *blisters*, and quickly ran into brown and blackish scabs. At this period, when the teats were thus *blistered* and swollen and very tender, the constitutional symptoms were first observed, viz., sudden 'sinking' or loss of milk, drivelling of saliva from the mouth, and frequent inflation and retraction of the cheeks, staring of the coats, 'tucking up of the limbs,' and 'sticking up' of the back, and rapid loss of flesh. The process of milking was now very difficult, disagreeable, and even dangerous; and on the 14th October, the middle of the third week the detachment of the crusts and loose cuticle, and the abundant discharge of pus on attempting to milk, compelled the milkers to desist for the purpose of washing their hands. Soon after this the cows became by degrees more and more tranquil, as the tenderness and tumefaction of the teats subsided." (p. 214.)

This narrative is particularly interesting. The simultaneous occurrence of the disease in all the subjects (of which the state of the teats bore evidence,) undoubtedly points to the existence of *one* common cause; for it must be borne in mind that, although the vaccine is epizootic, and attacks one or two cows at *different farms* about the same time, it never, so far as Mr. Ceely's experience extends, has been known to occur simultaneously in so large a number on one farm as in the present instance. Another corroborative circumstance is the fact of the young sturk being affected, because of course the disease could not have been casually communicated to it. But if there were one common cause, where shall we look for it if not in the existence of the variolous effluvia, to which they were all alike exposed, and which certainly would have been quite adequate to the production of smallpox in the human subject? It will be observed also that three of the milch cows escaped altogether, though in every respect situated as the others, and equally liable to have been accidentally infected in the process of milking. This fact, taken in connexion with others of a similar nature, have led Mr. Ceely to the opinion that there exists among cows, as well as among men, different degrees of susceptibility to the vaccine.—*British and Foreign Med. Review.*

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PART I.

ORIGINAL COMMUNICATIONS.

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**ART. X.**—*A Case of Cleft Palate successfully operated on by*  
JAMES CUSACK, M. D., Surgeon to Stevens's Hospital; *and*  
*two Cases, in which the Operation was successfully per-*  
*formed by* SIR PHILIP CRAMPTON, Bart., F. R. S., &c.

[Communicated by JOHN HAMILTON, Esq., M. R. I. A.]

**MR. CUSACK'S CASE.**—At the commencement of the Medical Session of 1836–37, I was consulted by Mr. H. G., about 18 years of age, who expressed himself most anxious to submit to any operation likely to relieve a defect of articulation, which had compelled him to abandon theological studies, which he had begun with the view of becoming a clergyman, and that threatened to be an almost insuperable obstacle to his success in the medical profession, whose study he had subsequently commenced.

On examination, I found he suffered from a complete congenital fissure of the soft palate. The act of opening his mouth produced, as usual, a separation of the parts; but he was sensible of their tendency to approximate during deglutition, and I also found that mechanically they could be brought very nearly into contact.

From previous experience in this operation, I was led to the conclusion, that the chief difficulties to be expected depended on the irritability of the patient, and were not referrible to the want of suitable instruments, or the deficiency of dexterity on the part of the surgeon. Under this impression, I recommended him to postpone the operation for some months, to accustom himself to retain his mouth open, and also to diminish the irritability of the fauces, by the frequent introduction of his finger.

At the termination of the session he again called on me, when I found his health so much impaired by his attendance on the winter classes, that I advised him to pursue the same plan, and to defer the operation till his health was re-established.

Early in the present session he again presented himself, when I was gratified to find that he not only enjoyed good health, but also had acquired the power of retaining his mouth open without uneasiness, and of bearing the application of any foreign substance to the fauces, with as little inconvenience as if it had been applied to the skin.

On the ——— December, 1837, at nine o'clock, A. M., the requisite preparations having been previously made, I performed the operation in my own study, in the presence of Mr. Rumley, Mr. Hargrave, Mr. Houston, and Mr. M'Clean, Jun.

With the aid of a simple forceps and curved needles I passed three ligatures, at equal distances from each other, through the soft palate, the lowest being at the base of the uvula; I then introduced a double-edged knife about a line from the margin of the cleft, and the same distance from the apex of the triangle, on each side in succession, terminating the incisions above. As he had not breakfasted, we allowed a short time to intervene during which he was supplied with some light nutriment; the edges of the wound were then approximated, and the ligatures tied with a surgical knot; one of these having been cut, as it was supposed, too closely, unravelled, and was replaced.

I saw him at three o'clock in the afternoon: there had been

some slight hemorrhage, and he complained of a teasing cough. At six o'clock in the evening I received a note from him to say that the ligatures had all unravelled. I visited him, in company with Mr. Rumley and a pupil, when I found that his statement was in a great measure correct. I cleared away a coagulum, which was the cause of the irritation, and without difficulty introduced two ligatures, at points more remote from the margins of the fissure. I then fed him, and afterwards brought the edges into contact, securing each ligature by a simple knot. So far from being disappointed at this accident, I felt pleased at its occurrence, as I flattered myself I had gained nearly twelve hours, and had remedied the undue pressure of one of the ligatures, which appeared to act injuriously on one section of the uvula.

From this period no untoward symptom occurred. On the fifth day, I cut loose the ligatures, and found that he had a perfect palate; the only remaining defect being a bifid uvula, a condition, which is commonly met with in persons who articulate with perfect distinctness.

I shall now conclude by a few remarks in his own words:—  
“The operation was not at all, comparatively speaking, painful; the cutting part I scarcely felt, and the presence of the ligatures was by no means distressing, except during the act of swallowing or eructation. From my own sensations, I think that by far the best plan would be to make the incisions in the first instance, and to defer the application of the ligatures until all bleeding has ceased, as I experienced much uneasiness and irritation from the presence of the coagulated blood which trickled from the margins of the wound. I now find the defect in my voice and speech considerably removed, and my articulation progressively improving each day; and I declare, in conclusion, that I would readily undergo the same operation, for similar benefit, if necessary.”

We have had within the last three months the advantage of witnessing two successful operations for the union of the cleft pa-

late, by Sir Philip Crampton. The first was a fine boy of 12 years of age, the son of Mr. Somers of Ardee-street; the second was a young lady of high rank and great beauty, 16 years of age. The peculiarity in the treatment of these cases consisted, first, in the manner of securing the ligatures; secondly, in the management of the patient after the operation. The difficulty of tying the second knot on the ligature without suffering the first to become opened by the strong retraction of the edges of the fissure effected by the muscles of the palate, has always been acknowledged. This difficulty, however, was effectually removed by an ingenious suggestion of Mr. Maclean's of Stephen's-green: after the ligatures had been passed through the palate at the distance of one quarter of an inch from the cut edge of the fissure, and brought out at the mouth, their ends were passed through a small perforated metallic bead, such as are used in making purses; the bead was then pushed down along the ligatures, closing them as it descended, until it touched the approximated edges of the wound; it was then compressed by a pair of strong, blunt-pointed forceps, and the ligatures were thus firmly secured without a knot at the required degree of tension. The other and most important peculiarity in the treatment consisted in allowing the patients an ample supply of soft food during the whole period of the treatment. Boiled bread and milk, custard, soup, and jelly, were given twice or thrice a day, and the patients were not confined to their beds. Sir Philip Crampton conceived that the total privation of all nourishment for five days, so strongly insisted on by M. Roux, was not only unnecessary, but in the highest degree unfavourable to the successful issue of the operation. Indeed if such were a necessary condition to its success, the operation must be limited to the few who had sufficient moral courage to endure so protracted and painful a fast, and sufficient strength of constitution to bear it with impunity. It might be concluded, *à priori*, that the absolute privation of all nourishment, solid or fluid, for five days, must cause, even in the strongest persons, a state of con-

stitutional disturbance highly unfavourable to the establishing the healthy process of union by the first intention; and that such and even more serious consequences have resulted from the practice, is proved by the unquestionable testimony of MM. Mannoury and Thore, interns of the Hotel Dieu, where M. Roux's operations were performed. They say: "The patient is not to be permitted to swallow his saliva, *he must be submitted to a complete abstinence*, the bad effects of which we may try to obviate by nutritive lavements, *which, however, scarcely ever attain the proposed end*. It must be confessed this abstinence may have disastrous consequences: it is difficult for a man, in all the strength of age and health, to support so rigorous a privation of nourishment. *We have seen in two of the patients delirium and severe nervous derangement ensue*. Perhaps it might be well to relax this severity, and to permit the use of some liquid aliments, the swallowing of which would not have such bad effects as is generally thought."

In both of the patients operated on by Sir Philip Crampton the voice and articulation have been considerably improved; but a considerable time must elapse before the full amount of the benefit which may be obtained from the operation can be ascertained; for the perfection of articulation depends in a great measure on the completeness with which the communication between the posterior nares and the mouth is closed by the soft palate, and soon after the operation the palate has not had time to become sufficiently elongated to discharge this function properly.

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ART. XI.—*Aneurism of the External Iliac Artery; Ligature of the Vessel near the Bifurcation of the Common Iliac; Recovery*. By O'B. BELLINGHAM, M. D., one of the Medical Officers of St. Vincent's Hospital.

MATTHEW DALY, æt. 32, a slender and healthy man (in other respects), was admitted into St. Vincent's Hospital August 18,

1842, under my care, labouring under aneurism of the external iliac artery on the right side. He states, that he laboured under venereal about ten years since, for which he took mercury, but has never suffered from any other illness of consequence; he had been in the habit of drinking, but he has given this up for the last two years. His trade is that of a brushmaker, and his occupation consists in constantly turning a lathe with the right foot. He continued to work until three or four days previous to his admission, under the impression that the disease would wear away, as he had been given to understand it was simply an abscess.

The aneurism is of about three months' duration; his attention was attracted to it by the swelling, which at that time (he says) pulsated strongly, it was however quite unattended by pain, and it has increased slowly in size; recently he has begun to suffer pain of a dull, aching kind in the hip and groin, which obliged him to give up work, and to seek admission into hospital. He has never received any injury in the part, or ever strained himself, that he recollects.

The aneurismal tumour is about the size of the section of a moderately sized orange, but more oval in shape, seated above Poupart's ligament, and extending about half an inch below it; a very strong impulse is communicated to the hand placed upon it, but no fremitus; immediately below Poupart's ligament, however, there is a slight fremitus, and on applying the stethoscope a loud single bruit is heard. There is neither swelling nor œdema of the foot, the circulation is perfectly regular and tranquil, and the heart's action natural.

In consultation with Sir Philip Crampton and Mr. Cusack, it was determined to place a ligature upon the common iliac artery on the right side, as it was supposed there would not be found sufficient room between the aneurism and the division of the common iliac, the external iliac being probably diseased above the aneurismal tumour.

A purgative draught was given on the night before the ope-

ration, and a cathartic enema administered the following morning, by which the bowels were well cleared out; an hour before the operation the patient took forty drops of laudanum.

The patient being placed on his back, slightly inclining to the sound side, having the thorax elevated, and the thigh bent upon the pelvis, I commenced the operation (assisted by Sir P. Crampton, Mr. Cusack, and Professor Porter) by a semicircular incision, beginning on a line with the last rib, and terminating nearly opposite the anterior superior spinous process of the ileum, and about an inch and a half internal to this process; its length was about five inches, the concavity towards the umbilicus; by this the integuments and superficial fascia were divided; the fibres of the external oblique muscle were then incised in the same direction, and next those of the internal oblique; by which the transversalis muscle was exposed. A cautious incision was made through the fibres of this muscle at the lower part of the wound, and a director endeavoured to be introduced under them; this muscle, however, was found to be considerably hypertrophied, being double or treble its natural thickness. On arriving at the transversalis fascia it also was found to be considerably increased in thickness, and presented almost a tendinous character; a portion of it was raised with a forceps, and cautiously incised; a director was then introduced, and an incision made sufficient to admit the finger, upon which this fascia was divided by a probe-pointed bistoury, both upwards and downwards. No artery was divided in this part of the operation requiring a ligature; the bleeding appeared to be altogether venous. The peritoneum was now very cautiously raised from the subjacent iliac muscle, by insinuating the fingers behind it, and this proceeding appeared to give much more pain than was expected. As the peritoneum was detached, Mr. Porter, with his hands in the wound, drew this membrane and the intestines towards the opposite side; the separation of the peritoneum was continued until my finger reached the upper extremity of the external iliac artery; and the expected difficulty from the

protrusion of the intestines was much less than had been anticipated.

After a short time I succeeded in getting a view of the vessel, and as it appeared to be perfectly healthy, its sheath was opened to a small extent by means of the blunt extremity of a director; and Mr. Trant's aneurism needle was then passed under the artery, from without inwards, without much difficulty; and here the advantage of his instrument was fully proved, for as soon as the eye of the needle appeared at the opposite side of the vessel, the ligature was drawn up by it, which owing to the depth of the wound and the distance of the artery from the surface, must have been attended with delay and difficulty had the common aneurism needle been employed: a single silk ligature was used, and as soon as it was tightened the pulsation in the aneurism ceased. The edges of the incision were then brought together by the interrupted suture and adhesive plaster. The operation was completed in little more than thirty minutes.

The patient was then placed in bed, with a pillow under the ham, in order to keep the thigh flexed upon the pelvis; and sixty drops of laudanum were administered. He complained of a sensation of cold in both lower extremities, and to the hand they felt colder than natural; this probably arose from the unavoidable exposure during the operation. Additional covering was employed, and jars containing warm water were directed to be applied to the soles of the feet.

8 o'clock, P. M. Five hours after the operation. Reaction has completely set in; both lower extremities feel rather warmer than natural; some thirst; pulse 80; and he has had some sleep since the operation.

Aug. 27th. Slept well last night; no pain except in wound; no tenderness on pressure over the abdomen; no sickness of stomach; some thirst, but wishes for something to eat; pulse 72; temperature of the ham on right side 88, on left 90.

28th. Did not rest quite so well last night, was annoyed by distention of the abdomen from flatulence, which occasionally

gave him pain; pulse 76; no thirst, nor pain on pressure over any part of the abdomen; the aneurismal tumour appears to be somewhat diminished in size.

29th. Pulse 72; slept well last night; feels hungry, and wishes for some solid food; temperature of both limbs similar. The wound was dressed to-day; the lower portion has united by the first intention; water dressings and adhesive plaster applied; sutures not disturbed. As the bowels have not been moved since the operation, a little castor oil was directed to be administered immediately, and repeated at intervals until it operated.

30th. Bowels moved freely, feels more comfortable since; no tension or uneasiness in the abdomen; the aneurismal tumour appears to be more solid.

31st. Wound suppurating freely; no thirst; appetite good; temperature of both limbs equal; pulse 80; ordered some weak chicken broth.

Sept. 2nd. He complained last night of pain over the middle sternal region, increased on inspiration; a mustard cataplasm was applied, and this morning the pain is much relieved; his pulse was slightly increased in frequency, about 88; in every other respect his condition is satisfactory.

5th. The wound was dressed with charpie to-day; the discharge is abundant, and of a good quality, healthy granulations are springing up from the bottom; the upper and lower portions of the incision have united by the first intention; pulse regular; no thirst; appetite good; has eaten chicken for his dinner the last two days.

8th. The wound has contracted considerably, and the discharge is diminishing; he sleeps well, and says he has not felt so well since the operation; no pulsation can be felt in the femoral or anterior tibial artery; he eats mutton chop for dinner with appetite.

13th. (Nineteenth day). The aneurismal tumour, within the last day or two, has become painful when pressed about the centre,

and its contents at this point are evidently more fluid than before ; he also suffers from a feeling of distention in the part, otherwise he is in very good health ; eats his breakfast and dinner with appetite, and has been allowed porter for some days. The ligature is not yet loose, and it gives him pain when it is gently pulled.

15th. (Twenty-first day). To-day the dressings were found to be deeply coloured with blood, and on examination a small orifice was detected at the inferior angle of the wound, through which a mixture of pus and blood could be squeezed. The aneurismal tumour is smaller and less tense, a portion of its contents having been evacuated in this way.

16th. (Twenty-second day). The discharge of pus and blood continues, but in diminished quantity, and the aneurismal tumour is smaller. The ligature was gently pulled to-day, when it yielded a little ; this proceeding, however, caused apparently very great pain, which was referred to the hip.

17th. A very feeble pulsation detected to-day in the femoral artery high up in the thigh ; none in the anterior tibial.

18th. (Twenty-fourth day). The ligature came away this morning without any pain, and was not followed by the discharge of a drop of blood ; the wound is very much diminished in size, having filled up by granulation nearly to a level with the skin, except at the point where the ligature presented. His health is very good ; he eats heartily, and sleeps well. The aneurismal swelling is diminished in size, but the integuments at one point covering it are discoloured and thinned, and its contents at this part are very fluid.

20th. To-day a coagulum presented at the orifice at the lower angle of the wound (which communicates with the aneurismal sac), and on removing it a large quantity of a mixture of pus and blood, amounting to several ounces, escaped ; the aneurismal swelling immediately subsided, and the integuments over it became flaccid.

22nd. Another portion of coagulum was expelled this morn-

ing at the dressing, along with some fetid pus; no pain is experienced now on pressure over the site of the aneurism, and the integuments covering it have nearly recovered their natural appearance and colour.

27th. The wound is very much filled up by granulation, but the edges of the skin at the centre of the incision are somewhat retracted; a little pus daily escapes at the dressing from the orifice communicating with the sac, and but little tumour remains at the site of the aneurism. The patient has preserved the recumbent posture, and no pulsation could be detected to-day in any part of the femoral or anterior tibial arteries, although I thought I had on a former occasion felt a feeble pulsation high up in the femoral.

Oct. 3rd. The skin over the aneurism, within the last few days, has become thin and discoloured, to the extent of about the size of a shilling, and some pus has escaped from two very small orifices which have formed in it; this was laid open to-day, and the pus pressed out. The wound is skinned over, except at the point where the ligature presented, and at the inferior angle, where the sac had formed a communication with it.

13th. The patient (who has latterly rather unwillingly remained in bed) mentioned, that on making some slight exertion this morning, about two or three ounces of dark-coloured and fluid blood escaped in a stream from the opening which had been made into the sac; a coagulum appears to be making its way out, and the blood had probably been confined under it.

18th. The wound is perfectly healed, and the patient was allowed to get up for the first time since the operation; the limb feels weaker than the other.

28th. The patient was discharged to-day at his own request, and was directed to wear a belt, with a pad over the site of the incision. The aneurismal sac has filled up by granulation to a level with the surface, and the opening made into it has nearly closed.

*Remarks.*—In the operation related in the foregoing case,

the incisions were made with a view to apply a ligature to the common iliac artery ; as it was supposed that the external iliac was not sufficiently sound between the aneurism and the bifurcation of the former vessel, and at the moment I was under the impression that the ligature had been placed upon the common iliac. The aneurismal tumour was not either exposed or felt during the operation ; and not above half an inch of the vessel tied was laid bare, in order to avoid unnecessarily disturbing the peritoneum and the connexions of the vessel with the neighbouring parts.

The external iliac artery appears to be much less frequently the subject of aneurism than the femoral or popliteal, and until within a few years aneurism of this vessel was considered to be almost beyond the relief of a surgical operation. The present case appears to be the only one in which the external iliac has been tied for aneurism of this vessel, or in which a ligature has been placed so close to the bifurcation of the common iliac. In fact most writers lay it down as a maxim (in placing a ligature upon a large vessel) to tie it at a sufficient distance from a collateral branch, to allow of the formation of a coagulum above the ligature ; the internal coagulum being supposed to have a material share in the process by which the artery is closed, and hæmorrhage more frequently following the operation when a ligature is placed close below, than at some distance from a large collateral branch. Indeed Roux (in his parallel between English and French surgery) has related a case which he witnessed in London, where the external iliac artery was tied by Sir A. Cooper, and the patient died of hæmorrhage a fortnight afterwards ; on examination it was ascertained that the obturator artery (which usually arises from the internal iliac) proceeded from the external, and arose immediately above the point to which the ligature had been applied. However, though the nearness of a collateral branch may interfere with the formation of a coagulum, it does not necessarily prevent the adhesive process from closing up the vessel. Mr. Travers, in the sixth

volume of the *Medico-Chirurgical Transactions*, concludes, from a series of experiments which he performed, "that after the proper application of a ligature the adhesive process is established in an arterial trunk in equal time, whether its branches are contiguous or remote." Indeed the recovery of the patient in this case shows that a large artery may be successfully tied at the distance of half an inch from the point at which a branch nearly of equal magnitude comes off.

The principal difficulty which was expected to have been encountered in the performance of the operation was the protrusion of the peritoneum and intestines, however it did not present at all the obstacle that had been anticipated; which may be attributed partly to the patient's bowels having been well cleared out previously, and to the administration of a full dose of laudanum a short time before the operation; and partly to the good sense of the patient, who struggled and cried out little during the operation. I had prepared several broad spatulas of the kind recommended by Dr. Mott for holding back the peritoneal mass, the hands however appeared to be better instruments, and I was much indebted to Mr. Porter, who undertook this task, for the very efficient assistance he afforded me, by which I was enabled to obtain a view of the vessel previous to passing the ligature.

The aneurism needle is generally directed to be passed from within outwards, in order to avoid the vein; in the present case, however, the vein was not seen at all, and the needle was passed with great facility from without inwards; and, as I have already observed, the hooking the loop of the ligature, owing to the depth of the wound, and the distance of the artery from the surface, would have been necessarily attended with delay and difficulty, had I not employed Mr. Trant's aneurism needle;\* the great advantage of which instrument consists in its seizing upon the ligature, although completely out of sight, as it is so constructed that it can take up nothing but the ligature, and it can-

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\* See note at the end of this paper.

not fail to draw it up, though the wound may be full of blood at the time.

The only unexpected difficulty met with in the operation (if it could be called such) was the great thickness of the transversalis muscle and of the transversalis fascia; the former being double or treble the normal thickness, and the fascia presenting altogether a tendinous character. It has been suggested that this hypertrophoid condition of these parts may have arisen from the occupation in which the patient had been engaged, consisting in constantly turning a lathe with that foot; on a subsequent examination, however, the abdominal muscles upon the opposite side appeared also to be more fully developed, and of greater thickness than natural.

I have already observed, that the separation of the peritoneum from the iliac fossa gave much more pain than I had expected; in fact the patient appeared to suffer as much from it as from the incisions; and the cellular membrane here, as the peritoneum was detached, poured out sufficient blood to obscure the view of the subjacent parts; so that the ureter was not seen during the operation; the bladder, however, was felt, and appeared to be distended; and the motions of the patient caused once or twice considerable contraction and tension of the psoas muscle, which, if he had struggled much, would have necessarily prolonged the operation, and interfered with the passing of the ligature.

The position in which the patient was placed, viz. inclining a little towards the sound side, was that recommended; it appears to me, however, that the most convenient position for dividing the abdominal muscles would have been upon the back, with a small pillow under the loins, so as to render these parts tense; after the muscular parietes had been divided the patient might then be inclined towards the sound side, so as to facilitate the subsequent steps of the operation.

The principal danger which was looked forward to after the operation was peritonitis; indeed from the extent to which the peritoneum was detached, and the handling of this membrane

rendered necessary to reach the vessel, it was supposed to be almost unavoidable. The patient's constitution, however, appeared to be one in which inflammation is not readily set up, as the operation was not followed by a single symptom of peritonitis.

The inflammation and subsequent suppuration of the aneurismal sac were accompanied by much less constitutional disturbance than might have been *à priori* expected, considering the size and situation of the aneurism. And the mode in which the contents of the tumour made its way to the surface by communicating with the lower angle of the wound, is perhaps worthy of remark.

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*Note.*—Through the kindness of Mr. Trant I am enabled to give a figure and short description of the mode of action of his aneurism needle; for a more full account of it I beg to refer to the Medical Press of November, 1839:

“The aneurism needle, when about to be used, is arranged as shown in figure A. The ligature is seen held in a direction parallel to the needle, for about one-fourth of an inch near the point, and at right angles with an imaginary line drawn from the point where the hook issues from the handle, meeting the ligature held in the needle.

“Figure B. shows the instrument as having been passed under the artery; the spring-hook is supposed to have been projected to the point of the needle, and having seized the ligature held at right angles, the operator is understood to be in the act of drawing up the ligature to him by the spring-hook, controlled by a stud made fast to the stem of the hook, and passing through the handle of the instrument.”



ART. XII.—*Contributions to Obstetric Medicine*. By THOMAS R. MITCHELL, M. D., L. R. C. S. I., Master of the South Eastern Lying-in Hospital, and Lecturer on Midwifery in the Dublin School of Medicine.

CASE OF RUPTURE OF THE UTERUS SUCCESSFULLY TREATED.

THE importance of the subject of rupture of the uterus is so generally admitted, that, although I am aware I have nothing new to offer on the subject in the following pages, still, I think, their perusal will not be without interest, as I conceive that the narration of any treatment, successfully employed in so formidable and generally fatal a complication, must prove beneficial. It is somewhat strange, that this accident should have been for so many years thought beyond the reach of art, for we find, that men of such established reputation as accoucheurs, as William Hunter and Denman, distinctly stating that nothing could be done, although the latter author, in later years, evidently wavers in his opinion. The Profession is indebted to Dr. Douglass for first drawing their attention to the principle of interference in these cases, and, although rupture of the uterus is still one of the most formidable and fatal complications that attends a labour, still numerous cases are on record of recovery after the accident, fully bearing out the propriety of interference, as it has been proved, that in these cases manual assistance was employed. Cases are likewise not wanting to prove, that females, becoming pregnant after recovery from this accident, have afterwards produced living children at the full time.

As to the causes that give rise to this accident, they have been so numerous and contradictorily stated, that the practitioner is at a loss to decide upon them; narrowing of the pelvis, too great rigidity, too protracted a labour, disproportion between the head of the child and the pelvis, a diseased condition of the uterus itself, &c. &c., have been stated. Dr. Collins, in his *Practical Observations*, page 242, seems to think, that dispro-

portion is clearly proved to be a frequent cause, from the fact, that this accident occurs more frequently in the expulsion of male children than female, the head of the former being larger than the latter.

Dr. Murphy, in a valuable paper published in the 20th Number of the Dublin Journal, states that, in his opinion, the various causes of rupture of the uterus have been greatly over-rated, and that they ought rather to be looked on as exerting a secondary than a primary influence. He distinguishes between their influence upon a healthy uterus and upon one whose structure is altered.

In nine cases published by this gentleman, I find in two only the accident occurred during their first pregnancies, and that in four of them a distinct softening of the uterus was discovered ; the periods at which the accident proved fatal varied from twenty-four hours to eleven days, the latter being the longest period in his cases.

During Dr. Collins's mastership, he states, that thirty-four cases occurred, two of which recovered. The treatment adopted in these cases was first administering a purgative, leeches, stupes, &c., and after the first twelve days, fruit, both raw and stewed, chicken broth and wine.

In Dr. Murphy's cases, a large opiate was given in the first stage, with some stimulant, a purgative afterwards. The symptoms of peritonitis being met, according as they appeared, by local depletions, stupes, calomel, &c. He states, that when salivation took place, there was a remission of the symptoms. Besides the authors I have mentioned, who have treated of this accident, I might mention numerous others, but a reference to the public journals will clearly prove that it has not been overlooked. I must not, however, omit to mention the name of M'Keever, to whom I conceive the Profession are indebted for a valuable suggestion, in the application of the Perforator in cases of this description, viz., to apply it not at the most depending part of the presentation, but to one side, so as to press

the part as it were against the pelvis of the mother, and thus prevent the recession of the child through the rent ; I can speak practically of its benefit, and individually return him my best thanks for his suggestion.

As to the symptoms of rupture of the uterus, they, like its causes, may be various ; there are some, however, which are rarely absent and can never be mistaken. It generally happens that every thing has been going on well for some time, when all of a sudden the woman cries out that something has given way within her ; which sensation is quickly succeeded by great prostration of strength, vomiting, cessation of the pains, and recession of the presentation ; a discharge of blood sometimes takes place also from the vagina. These symptoms may *all* be present, or the woman may not have the slightest premonitory symptoms whatever, as in the case I am about to relate ; the peculiar appearance, however, of distress of countenance is rarely or never absent. We find likewise that these symptoms may be and frequently are present in females whose labours terminate favourably. It is an undoubted fact that in many instances no warning whatever is given of the accident, and I most fully concur with Dr. Murphy, in thinking that too much attention to these symptoms is calculated not only to lead the practitioner astray, by inducing him to unwarrantably interfere with the case, but likewise, with a young practitioner, to produce uneasiness and anxiety of mind as to the result.

It is a remarkable fact, that in cases of this kind the majority are in those who have borne several children previously, which would induce me to think that the uterus has been either injured or debilitated during former labours, and I so fully agree to some conclusions arrived at by Dr. Murphy, in the paper before alluded to, that I shall not hesitate to quote them. He says, "that a perfectly healthy uterus is rarely ruptured except from external injury." 2ndly, "That in most of the instances where it occurs, it may be traced to morbid lesions either previously existing or produced by inflammation ; and

even in some cases where this cannot be satisfactorily proved from inspection, the history of the case would seem to indicate it." 3rdly, "That rupture may occur in cases where the labour is not unusually prolonged, nor the pains violent; on the contrary, it has happened where the pains were weak and the progress of labour in every other respect favourable."

Although in the case about to be related we have not been able (most fortunately) to prove the correctness of the first conclusion above quoted, still from the previous history of the case we are warranted in coming to a conclusion, that some morbid action was going on, as about three months previous to her labour she applied to me, complaining of great pain in the lower part of the abdomen, which was incessant, and that she had had a discharge of a thin, foetid fluid from the vagina, twice, about a fortnight elapsing between each discharge. She described the sensation of the child as if it were standing upright, the pressure being in front, to which she referred the pain.

That the third conclusion was most fully borne out, the narration of the case will clearly prove. I shall therefore now draw your attention to the history of the case.

CASE OF RUPTURE OF THE UTERUS TERMINATING FAVOURABLY.

B. R., æt. 38, mother of six living children, was admitted into the South Eastern Lying-in Hospital, on Sunday, September 18th, 1842, at 9 o'clock, P. M. On examination per vaginam, the os uteri was found dilated as large as a penny piece; head presenting; the pains recurring about every ten minutes. She was left in charge of the pupil on duty.

The labour pains continued brisk and frequent up to 3 o'clock, A. M. of the 19th, when I was called up to her, as she was very restless and uneasy. I now found the os uteri as much dilated as the circumference of a teacup, the face towards the pubis; the pains effectual and frequent. I again left her, and did not see her again until 7 o'clock, A. M., when I was summoned to her in consequence of the pupil's being alarmed at the great prostration of strength which had ensued. There was

now considerable irritability of stomach, and vomiting of bile mixed with mucus; pulse scarcely perceptible at the wrist; coldness of extremities, and most peculiarly glassy and sunken appearance of the eyes. I ordered her immediately a tumbler of hot, strong punch, to be given in divided doses, and, in consultation with Dr. Beatty, at once determined on extracting the child. On attempting to extract with the forceps the head receded, so that it was thought advisable to use the perforator, which was done in the manner recommended by Dr. M'Keever. The head was afterwards extracted without much difficulty with the crotchet, the uterus acting in the expulsion of the shoulders and body. The placenta was extracted immediately, and a rent perceived at the junction of the anterior part of the cervix with the os uteri. The uterus contracted firmly, and no intestine whatever escaped through the fissure.

The contraction of the uterus, I think, was mainly attributable to the very valuable assistance I received from my friend Dr. Beatty, to whose kindness I have been more than once indebted.

Immediately after the operation, a grain of solid opium was administered, and ordered to be repeated every hour.

12 o'clock, noon. Pulse risen slightly; complains of pain in the abdomen; temperature slightly increased.

℞ Tinct. Opii. gtt. l.

Mucil. Amyli. ℥ iij. M. Ft. Enema.

Statim injiciendum.

Hot bottles to the feet; continue the punch and opium.

2 o'clock, P. M. Temperature considerably increased; pulse risen 96; has dosed a little and feels refreshed.

6 o'clock, P. M. Complains of thirst, and of pain in abdomen; slight tenderness on pressure, and some tympany; pulse 106.

℞ Calomelanos, gr. xij.

Pulv. Opii gr. vi. Divide in pil. æq. xij.

Sumat i. om. hora.

Foment abdomen with cloths wrung out of hot water, sprinkled with turpentine.

10 o'clock, P. M. Still improving; bladder distended with urine; catheter used, and about a pint of urine drawn off.

20th. 7 o'clock, A. M. Slept at intervals during the night; appears to be slightly under the influence of the opium; attempted to pass water, but could not; catheter used with the same result; skin warm and moist; less tympany; pulse full, and compressible, 110.

Continue the pills and fomentations.

8 o'clock, P. M. Going on much the same; bowels relieved three times since morning.

21st. 8 o'clock, A. M. Slept pretty well; complains of pain in abdomen and of great weakness, which is probably owing to diarrhœa, produced by the calomel; pulse 105, soft; passes water without assistance.

Stop the use of the Calomel, and give an Enema, with thirty drops Tinct. Opii, every two hours.

22nd. 9 o'clock, A. M. Improving in every respect; pulse 100; stomach still irritable, although much less so; diarrhœa continuing.

Pulv. Opii, gr. i. om. hora.

Arrow Root.

23rd. Not so well; pulse quick and small, 108; passed a restless night; diarrhœa less; tongue moist; complains of great debility and nausea.

Ordered a table-spoonful of brandy in the Arrow Root.

24th. Going on well; stomach still irritable; diarrhœa continues.

Persist in the use of the Opium.

25th. Slept well; pulse 100; diarrhœa less; no vomiting for the last six hours.

Ordered an egg, to be beat up with a tea-spoonful of brandy, and Tinct. Opii. gtt. xxx.

26th. Complains greatly of pain in the right side of the neck,

which is somewhat swollen, hard, and inflamed ; says that it interferes with her breathing. In other respects improving.

The neck to be stuped and poulticed afterwards ; to get beef tea, and Opiate Enemata.

27th. Neck still painful ; pulse 108 ; appetite improving.

Continue the Enemata and poulticing.

She ate an egg, with a small piece of bread and butter.

28th. Neck much better ; slept pretty well ; pulse 98 ; appetite good.

Continue the same plan of treatment.

October 5th. Up to this date every thing was much the same, and not worthy of notice, when a discharge of extremely foetid, muco-purulent fluid, about two pints in quantity, took place from the vagina. Her general health is much improved ; appetite good ; she eats a mutton chop with a relish. The diarrhoea continues without intermission, notwithstanding that for the last four nights she has taken ten grains of compound kino powder, in addition to the usual opiate enema.

6th. The diarrhoea has ceased for the first time. She has now taken fifty-three grains of solid opium, and between the mouth and enemata near 400 drops of laudanum. Discharge about a pint and half, less foetid, and of a more laudable appearance.

Omit the Enema.

9th. Slept well every night since the last report, without an opiate ; gaining strength daily, notwithstanding the discharge from the vagina, which is diminishing ; appetite good ; passed a solid stool, for the first time.

The vagina to be syringed frequently with decoction of Chamomile ; mutton chop and porter.

She continued doing well until the 13th, when she was seized with a rigor ; considerable prostration of strength and irritability of stomach ensued ; the pulse was small, and she felt very

restless and uneasy. She was ordered immediately three ounces of mulled wine and the following draught :

℞ Tinct. Opii, gtt. xl. Sp. Ammon. Comp. ʒi.

Aq. Cinnam. ʒj. M.

14th. Slept well ; feels better in every respect ; pulse fuller and stronger, 96.

Continue the wine, and give Bark in effervescence, with Ammonia.

Walked across the ward without assistance. Discharge from vagina very slight.

Every thing went on the same up to the 20th, when it was thought advisable to allow her to go home, as the change of air might be of use to her. The discharge from the vagina has entirely ceased, and all that she complains of is great debility ; she was accordingly sent home with her husband, being exactly the thirty-first day from the accident.

In the foregoing case I shall, in the first place, call attention to the treatment adopted. It will be observed, that from the commencement no depletion whatever, either general or local, was resorted to, the chief reliance having been placed upon opium. It will also be observed, that during the first eighteen days she had a continual diarrhœa, which the large quantity of opium did not check, bearing out very fully the opinion of Dr. Collins, expressed in reference to the two cases which terminated successfully in his practice ; he says, page 252 of his *Practical Observations*, " the bowels in both these cases were easily acted upon, after having been, in the *first instance*, well emptied. This contributed much to their favourable termination ; for the most part where this injury occurred, the bowels yield with difficulty to the effect of medicine ; and, in many cases, it will be found impossible to evacuate them, even with the largest doses of the most drastic purgatives, until death is close at hand, when they begin to act violently. It is

a matter of the utmost importance to have them early opened, and afterwards to keep up their action by mild purgatives, at the same time using all the means in our power to counteract inflammation."

It may be said, that from the commencement opium was the sole remedy relied on; it was administered at the suggestion of my friend Dr. Beatty, who had previously witnessed the good effects of this remedy in a case of rupture of the uterus, occurring likewise in the anterior wall of the cervix uteri. In this case, Dr. Beatty was called to see the patient after the accident had occurred, it having been produced by the awkward and ineffectual attempt to turn. He states, that he found the woman in an extreme state of collapse, with an almost imperceptible pulse, the surface cold, and covered with a clammy moisture. Some restoratives were given, and the child was turned and extracted. He was induced to try large doses of opium, from having witnessed its good effects in cases of sudden bursts into the cavity of the peritoneum, a plan of treatment first brought before the Profession by Drs. Graves and Stokes, in their Clinical Report of the Meath Hospital, published in the fifth volume of the Dublin Hospital Reports.

It is, I think, an interesting question to decide, in what way opium acts in these cases of rupture of the uterus? It is well known that this drug exerts a powerful action in allaying or diminishing muscular contraction, and is thus supposed to be of use in cases of rupture of the intestine; at least this is the view taken of it by Dr. Hart, who at p. 306 of the fifth volume of the Dublin Hospital Reports, after speaking of the impropriety of giving purgatives, as by their action they would tend to increase the peristaltic motion of the intestines, and thus produce a greater effusion of the intestinal contents, says, "instead of purgatives, then, it would appear more proper to give large doses of opium, with a view of suspending the peristaltic motion; could this be accomplished, and the inflammation moderated, by

bleeding general and local, and counter-irritants, sufficient time might be gained for the formation of adhesions around the wound in the intestine, &c."

In the case just related, it is a fact worthy of remark, that although the uterus contracted firmly immediately after the extraction of the child, yet that as soon as the opium had been taken in sufficiently numerous doses, it became relaxed, so much so, indeed, as to appear as large as when impregnated, and this dilated condition it did not lose till the tenth day, evidently, in my mind, proving that the opium acts in a similar manner in both accidents. Another remarkable similarity produced by this medicine in the two accidents, rupture of the uterus and rupture of the intestine, is, that in both it appears to lose its narcotic and astringent properties, as evidently proved by the case of a man admitted into the Meath Hospital (and alluded to in the above named Report by Drs. Graves and Stokes), labouring under symptoms of peritonitis, from ulcerative perforation of the intestine, to whom 105 grains of opium, exclusive of that in the injections, were administered, without the patient experiencing the slightest coma, headach, or delirium; a diarrhoea likewise setting in severely for three or four days, agreeing most particularly with the effects produced in the case just related.

CASE OF PLACENTA PREVIA, IN WHICH THE HEAD ACTED AS A PLUG  
UPON THE PROTRUDED PORTION OF PLACENTA.

Every accoucheur is aware that presentation of the placenta is one of the most common causes for the production of hæmorrhage, and hence the reason that in these cases assistance is the more necessary; and although in cases of this description it is of the utmost importance both for mother and child, that the labour be quickly terminated, still neither the birth of the child nor the placenta necessarily insures safety, as the firm contraction of the uterus is absolutely required.

There are many cases on record where the placenta has been

expelled first, in which the hæmorrhage has been known to recur and the woman die. In two cases mentioned by Dr. Collins, however, a more successful termination followed, as the bleeding ceased as soon as the placenta was expelled, although it took place before the child. Dr. Burns explains the way in which the hæmorrhage ceases, when the entire placenta is expelled, by stating, "that the hæmorrhage from its veins, both marginal and from its disc, ought to cease, and if the action of the uterus be strong, the uterine orifices may be diminished and the circulation confined to the substance of the uterus."

In all cases of this kind it is of the utmost importance to the safety of our patient that the medical man shall be close at hand, and in many cases, especially where the os uteri is not sufficiently dilated to admit the hand for the purpose of turning, it becomes one of considerable suspense both to the attendant and the patient. It is a rule laid down by all practical men, that a patient ought not to be left, as she may lose so great a quantity of blood as to prove fatal before any assistance could be given to her. Dr. Rigby, in his invaluable work on Uterine Hæmorrhage, when speaking on this subject, remarks, page 171 : "But it frequently happens, and that too before the most natural and easy labours, that pains very much resembling true labour, and which in some degree dilate the os uteri, shall come on and alarm the patient and her attendants, with the expectation of delivery being near; and yet soon after, and without any apparent cause, shall entirely go off, leave the patient as well as usual, and not return till the time of delivery, which in some cases may be many days, or even weeks, after the first alarm. If this should happen when the placenta is situated on the os uteri, the effects of it with regard to hæmorrhage would *probably* be *these*: that at the first coming on of these spurious pains, there would be some discharge, that upon the pains going off the flooding would cease, that if the woman were carefully kept still, it would not return till the time of real labour, which, as observed before, might be very remote; and that then, as the parts would be in the same state as

if there had been none of these false pains, it would be preceded by such symptoms as would give sufficient time to have the surgeon ready to assist the patient before any considerable loss of blood had taken place."

Having premised so much, I shall now proceed with the details of the case.

On the morning of Sunday, June 3rd, 1842, I was summoned by one of the pupils of the South-Eastern Lying-in Hospital, to J. S., residing on Sir John Rogerson's-quay, æt. 33, and mother of four children, owing to his being alarmed at a considerable degree of hæmorrhage which took place with each pain. I saw her at 8 o'clock, A. M., and perceived, on going into the room, that she had lost a good deal of blood, the floor being partially covered with it. On examination per vaginam, I found it filled with coagula, which I removed, and on passing my fingers up to the os tincæ, I ascertained that a portion of placenta, of about two inches in circumference, was detached and protruded through it, but seeming to be attached to the anterior part of the cervix only; the os uteri was dilated to about the size of a shilling (but very rigid); the pains brisk, recurring every six or eight minutes, the head being forced down with each pain against the protruded portion of placenta. Having waited a short time deliberating whether I should attempt to turn or not, I found that with each pain the hæmorrhage became less and less; and upon re-examining, I discovered that the head pressed so firmly upon the portion of placenta, compressing it between the posterior part of the pubis and itself, acting in this way as a complete plug, and thus arresting hæmorrhage. As the head descended the bleeding diminished, and finally ceased altogether, which induced me to leave the case entirely to nature. The pains soon recurred with greater frequency, and I had shortly afterwards the gratification of having a still-born child expelled, without any interference whatever. The placenta came away in five minutes, the uterus contracted well, and there was no recurrence of the hæmorrhage. Her convalescence was retarded somewhat by great debi-

lity, consequent, no doubt, upon the loss of blood, but otherwise no bad symptom appeared, and up to this date she is quite well.

*Remarks.*—The case just related comes under the classification of unavoidable hæmorrhage, so usefully made by Rigby, and the plan adopted differs somewhat from that recommended by writers on the subject. It is, I believe, an established rule that in cases of unavoidable hæmorrhage, the only practice likely to prove beneficial, is at once to introduce the hand and turn. Simple as this operation is, it is not unattended with danger, especially if the os uteri be at all rigid and undilatable; the forcible introduction of the hand, under such circumstances, may give rise to and produce worse effects than the continuance of the flooding, provided the strength of the woman will bear it.

In practice it is proved that a small portion of placenta may give rise to as great a degree of flooding as if the entire were detached, and there are many cases in which it will be a question with the medical man, whether the delivery shall be forced or the case be left to nature. It is to this point that I would wish particularly to draw attention in the foregoing case. The os uteri was but slightly dilated and rigid; with each accession of pain there was a recurrence of the hæmorrhage to an alarming extent. What was to be done? Bad consequences were likely to result, either by interference or leaving the case alone. Another prominent feature in this case was, that the protruded portion of placenta was attached to the anterior wall of the cervix uteri only. This, I think, was of essential service to the woman, as during the time the labour progressed, after the flooding had ceased, it could be felt distinctly, and when the occiput cleared the arch of the pubis, it was within half an inch of the os externum, being pressed between two hard bodies the whole time.

When we take into consideration the great risk that attends cases of placenta presentation, both to mother and child, it will not, I trust, be supposed that in making this case public, I for one moment wish, or that I am presumptuous enough to suppose, that the recital of a single successful case will be likely to

upset the opinion and practice of established authorities ; all I aim at is the consideration of the question, whether, when the portion of placenta is attached anteriorly, the head can be made to act as in this case, and if so, are we not justified in giving nature a trial before having recourse to an operation, which can never be performed without some degree of danger, even under the most favourable circumstances. It would be useless to attempt to prove, that the premature attempt of introducing the hand is fraught with danger, every work on midwifery teems with cases ; Dr. Ramsbottom relates eight cases, all of which proved fatal. Gooch, Merriman, Davis, and Collins, warn us against it ; the observations of the latter author are of such practical importance, and so much to the point, that I shall take the liberty of quoting them. He says, in his *Practical Observations*, page 93, "I know of no circumstance so much to be dreaded as the forcible introduction of the hand, when the parts are in a rigid or unyielding state, for although turning the child is the established and most desirable practice, yet the success of this operation will mainly depend on the judgment of the practitioner in selecting the most proper and favourable time. Cases will happen, where he is obliged either to suffer his patient to sink from loss of blood, or proceed to deliver when the parts are in an undilated and rigid state, in order to afford her the only chance of life ; but dire necessity should alone compel him to hazard the consequences of such violence."

I think I have said enough to prevent it being thought, that in cases of placenta presentation, I am an advocate for procrastination. There are, as I have already stated, numerous cases on record, where the placenta has been expelled first and the hæmorrhage has ceased ; but I cannot find a similar case to the one now mentioned ; at the same time, I should be extremely sorry to think, that the perusal of this case should induce any young practitioner to procrastinate too long, as I merely submit that this is an exception to a general rule.

ART. XIII.—*Observations on the Arrangement of the Fibres in the Optic Nerve of the Loligo, and other Animals.* By JOHN H. POWER, M. D., Lecturer on Anatomy and Physiology in the Richmond Hospital School of Medicine, &c.

It is universally admitted, that the study of comparative anatomy has contributed largely to our knowledge of the intimate structure and functions of the different organs of the human body; it is now considered indispensable to a correct understanding both of the anatomy and physiology of man. How many organs, whose intimate arrangement lay unknown for centuries, have been brought to light by the investigation of corresponding parts in the lower orders of animals? Let us take, for example, the liver and pancreas, two glands composed of a complicated arrangement of parts in the higher orders, so intricate, as for a length of time to elude all attempts at successful inquiry into their nature. Comparative anatomy has, however, cleared away the obscurities, and, by presenting us with different developments of the one organ, from the simplest form of a single mucous surface, to a multiplication of that surface by numerous off-sets or ramifications, and from this to an infinite distribution of it in the form of exceedingly minute tubes, till we arrive at the complex organs we have alluded to, we are led to an acquaintance with their minute organization, which, otherwise, might for ever have remained a secret.

There is not probably in the entire range of comparative anatomy, a subject more interesting and attractive in its character, than the example which it is the object of this paper to present to the reader.

The animal affording this example, is the *Loligo* or Calamary, one of the cuttle-fish tribe; it belongs to the cephalopodous mollusca, and although placed thus low in the scale of being, presents us with so extremely perfect an organization, as to have attracted from time to time both the attention and the admiration of the naturalist. It is described as being an animal, rapid in its motions, and of voracious habits; it is furnished with a

beautiful apparatus to lay hold upon, and a strong horny beak to destroy its prey; in it we notice an early development of a spinal column according to some naturalists, according to others a rudimental skeleton, together with an exceedingly perfect nervous, respiratory, and circulatory apparatus.

It is to a portion of the nervous system that at present I would wish to direct the attention of the reader; the better to enable it to discover its prey, and to avoid danger from its formidable enemies, the creature has been provided with an organ of vision of great beauty and perfection. We find the central masses of the nervous system so arranged, as to form a complete collar round the œsophagus; from either side of the proper cerebral ganglion, we have two large short nervous trunks proceeding outwards in a horizontal direction; these are the optic nerves; they are seen afterwards terminating in two ovoidal bodies, each much larger than the cerebral ganglion itself; at one side this body receives the optic nerve, and from the other, which is directed towards the eyeball and slightly concave, stream forth the filaments which compose the retina. The eyeball is of very peculiar conformation, it is enclosed in a socket formed posteriorly by a cartilaginous cup, anteriorly by the cornea, which is very slightly convex, and on the sides by a fibro-cartilaginous substance: within this socket we have the proper organ of vision, consisting of the optic ganglion giving origin to the fibres which terminate in the retina, surrounding which there is a soft fatty mass, somewhat resembling an Haversian gland,—a considerable quantity of a serous fluid contained in a serous sac, particularly described by Professor Owen, and considered by him as analogous to the membrane of the aqueous humour, and which he supposes facilitates the motions of the eyeball,—a second sclerotic tunic perforated by the fibrils of the ganglion; and internal to their expansion, the choroid tunic, which, from the strangeness of its position with regard to the retina, has attracted a good deal of attention,—the hyaloid membrane containing the vitreous humour, and a crystalline of extremely curious construction, very

closely resembling in appearance the Coddington lens. Finally, contained within this general capsule, we have the muscles moving the eyeball, together with their proper vessels and nerves. The mobility of the organ is very remarkable, the creature, when captured, may be seen turning it about in almost every direction.

All these parts have, from time to time, received the attention of the naturalist, and have been in general described with considerable accuracy. Swammerdam, nearly two centuries ago, wrote upon the anatomy of the "Sea Sepia," and in his "Book of Nature, or the History of Insects," there is a delineation of the nervous system: the optic ganglion, and its filaments, are beautifully represented: but in this as well as in all other descriptions and delineations of the nervous system of these animals, the precise relation which the filaments bear to one another has altogether escaped observation. Cuvier, in his "Mémoire sur le Poulpe,"\* has furnished us with beautiful engravings of the animal; but he has made the same omission. The same thing occurs in the engraving of these parts in Part I. of the third volume of the "Catalogue of the Museum of the Royal College of Surgeons, London;" and in Dr. Todd's "Cyclopædia of Anatomy and Physiology," there are engravings of the optic nerve, ganglion, and its filaments; but no notice has been taken in this valuable article on the Cephalopoda, by Professor Owen, of the peculiar arrangement of the terminal fibrils of the nerve.

It is not easy to conceive how naturalists could have overlooked the peculiarity alluded to; it might probably be accounted for by their not having viewed the parts when floating in a transparent medium. If after having carefully dissected the eye, the parts be allowed to lie flat upon the table, it is not very likely to arrest attention, but when, as was the case with the preparation from which the engraving, fig. 1, has been taken, the animal be suspended at full length in spirits of wine, the eyes so drawn out in the horizontal direction, as that the optic nerve and its connexions shall

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\* "Mémoires pour servir a l'Histoire et a l'Anatomie des Mollusques."

be rendered tense, the beautiful appearance here delineated cannot fail to strike the eye.

The preparation was made by my friend and colleague Dr. Mayne, in the manner I have described, for the purpose of exhibiting the nervous system ; it is one of great beauty, and is at present preserved in the museum of the Richmond Hospital School of Medicine ; on one occasion whilst holding it between me and a strong light, the peculiarity about to be described became exceedingly obvious.

From the entire circumference of the ganglion, as represented in Fig. 1, we see streaming forth a considerable number of fibres ; they appear to spring from the margins of the ganglion, but on making an examination with a lens of moderately magnifying power, these fibres may be traced running along its entire surface backwards to that spot where the short trunk of the optic nerve is lost in its structure. After they have left the optic body, flowing from the two surfaces, the one anterior, the other posterior, as represented in the engraving, the filaments approach each other so as to form a triangular space, best seen on making an horizontal section of the parts, the base situated at the ganglion, the apex at the convergence of the filaments ; at this spot they form no union with each other ; those of opposite sides remain perfectly distinct from one another, nor are they bent out upon themselves, so as to become expanded from the retina. Careful observation discovers the following extremely curious and interesting disposition of the filaments : all those which flow from the back part of the ganglion pass on to the anterior part of the retina, and *vice versa*, so that when they approach each other at the angle we have already mentioned, they interlace in the most perfect manner, and so, like the crossing of the fingers of both hands, pass between one another to opposite sides of the retina. Fig. 1 is an accurate representation of this arrangement taken from nature. It will be seen also, from this engraving, that when the filaments are in the act of interlacing, they present a flattened appearance. That portion of the nerve formed by the

filaments running from the ganglion to the eyeball, presents an hour-glass appearance, or two triangles united at their apices,

Fig. 1.

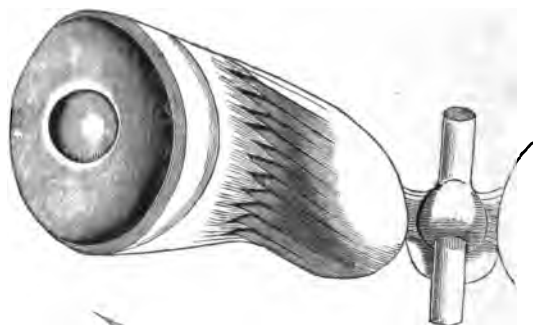
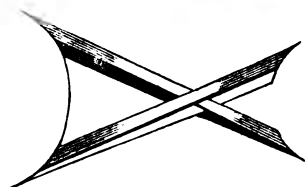


Fig. 2.



the base of one situated at the ganglion, that of the other constituted by the retina, whilst the union of the apices is represented by the mutual crossing of the fibres. Fig. 2 presents a diagram of a horizontal section of the fibres in the act of decussation.

After I had correctly ascertained the exceedingly interesting peculiarity now described, I had the honour of announcing it to the Surgical Society of this city, and at that time intimated my intention of investigating the subject still further, with a view to ascertain the arrangement of the fibres which compose the optic nerves in other animals, particularly in man, expressing my opinion, that a somewhat similar disposition of the parts would in all probability be found to exist. An abstract of this communication appeared in the *Medical Press*, vol. v. p. 103. Since then I have examined the optic nerve in the *S. officinalis*, and in the *Octopus*; in the latter the arrangement is very nearly precisely similar to that in the *Loligo*; in the *S. officinalis*, however, there is a much greater number of fibres arising from the ganglion, and this gives the appearance of a greater degree of complexity, particularly at the extremities of that body; in these

situations the fibres are so grouped together, that their arrangement is not so satisfactorily seen as in the central portion of the nerve; nevertheless, even here, on examining the surface of the ganglion with a lens, I could perceive the fibres running for a given distance upon it, converging towards a point, and soon becoming lost by indigitating with other fibres on this body, and so eluding further examination. Any attempt to trace them into the ganglion itself would, I think, be useless, as this body is exceedingly soft and pulpy, particularly in the interior. In the centre of the nerve, however, there can be no doubt of the existence of the interlacing fibres. The peculiarity I have described seems to be a characteristic feature in this entire group of animals.

I have recently had many opportunities of examining this nerve in a great variety of animals, and in almost every instance I was able to detect such a disposition of many of their fibres, as I conceive serves the same purpose as that in the *Loligo*. In detailing the result of these examinations, it will be necessary to advert to the optic tract and commissure, as well as to the nerve itself. I will, however, avoid as much as possible unnecessarily dwelling on any thing connected with the anatomy of these parts, and shall merely confine my remarks to what more immediately bears upon the matter at present under consideration, particularly as my friend Dr. Mayne is at present engaged in making a series of examinations into the origin and structure of the optic nerves of various animals, the result of which I feel assured, when published, will prove both interesting and instructive.

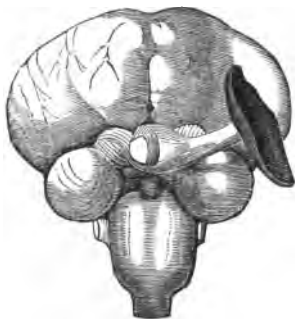
In the Hake and Cod, as in other osseous fishes, there is no commissure, but the nerves decussate with one another without any interlacement of their fibres, and so terminate in the eyes of opposite sides; I have observed, however, in the substance of each nerve, close to its connexion with the brain, an apparent enlargement, and at this spot I was able to discern the fibres of which it is composed, irregularly interlacing with each other in the interior of the nerve. The superficial fibres in the Cod run spirally onward towards the eyeball, and just where the nerve

presents the folded appearance previously to its expansion in the retina, this arrangement is more evident.

In the Turtle, the fibres of each tract make a twist upon themselves, those lying superiorly at the origin run downwards, thus apparently contributing to form the inferior fibres of the nerve of the same side, and also a portion of the opposite nerve. In a preparation of the brain of a turtle made by Dr. Mayne, the general contour of the tract presents, in a very striking manner, the twisted appearance alluded to.

I succeeded in removing, with a great deal of care, the brain of the eagle, with the eyes attached to the optic nerves; the parts here connected with vision deserve particular attention; the tractus opticus may be described as arising by two bands, the fibres of which are quite distinct, the one from the anterior and superior, and the other from the posterior and inferior surface of the optic lobule; these fibres then contribute to form the tract which here presents a twisted appearance: the fibres derived from the anterior and superior part of the lobule are the most superficial or inferior in the natural position of the organ; these bending along the outside of the commissure, gain its posterior surface, whilst those arising from the posterior and inferior portion of the lobule twine under cover of the last described band, and from their general direction appear to become conti-

*Fig. 3.*



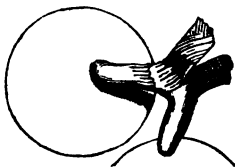
nuous with the fibres situated on the anterior part of the commissure, whose destination is the anterior portion of the optic nerve and retina. I have succeeded in distinctly tracing the band first described, upon the back part of the commissure, and then upon the posterior part of the optic nerve of the opposite side, and finally, its expansion in a corresponding por-

tion of the retina. By the aid of a lens of strong magnifying power, a distinct decussation between the bands of opposite sides

may be seen on the back part of the commissure. The view presented in Fig. 3 is an accurate representation of the course of the fibres I have described, when viewed through a lens of moderately magnifying power; without any assistance of the kind, however, the peculiarly twisted appearance of the optic tracts must arrest attention.

I am indebted to my friend Dr. R. Smith, for a specimen of the horned owl. I removed the brain of this bird in the manner above described; I gently drew away one of the optic nerves from the tract of the same side, thus widening the interval between them. Without the aid of a lens, the decussation of the deep-seated fibres, as represented in Fig. 4, became ex-

Fig. 4.



ceedingly obvious; this view is magnified, but not considerably: the arrangement here delineated is one with which naturalists are already familiar, and Müller describes it as existing in all birds. I have examined the parts in the eagle, and I find the same ar-

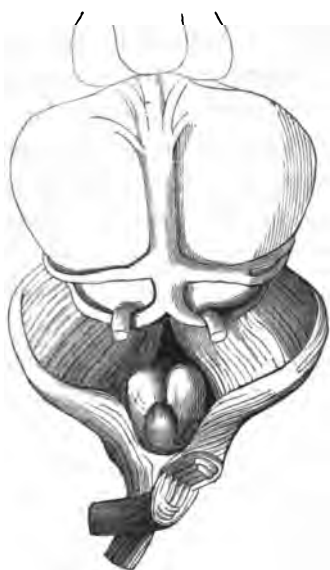
range-ment of the deep-seated fibres. In the adjoining engraving of these parts in the horned owl, there is an appearance upon the tract, which is exceedingly curious. The fibres of each tract do not run straight across from one side to the other, they are all more or less oblique in their course, and previously to the formation of the commissure, the fibres of the tract were seen, as here represented, with the aid of a lens, decussating with one another. Thus in this animal, as in the eagle, there was not only a decussation between the fibres of the nerves of opposite sides, but a decussation, though of a different kind, between the fibres of each nerve, whilst in the optic tract.

In the sheep, the superficial fibres of the tract observe the same arrangement; they take a spiral course, their fibres forming frequent decussations with each other, and running upon the surfaces of the opposite nerves. In order to ascertain the internal arrangement of the nervous material at the commissure, I drew the nerve gently from the tract of the same side, and

whilst performing this traction, the decussation was most strikingly apparent. The inner fibres had the appearance of being arranged in plates laid one over the other, and passing between each other, to form the nerves of opposite sides.

In the human subject, the parts are exceedingly complex ; on laying open the optic tract, close to its origin, and spreading out its fibres, they were seen interlacing with each other in such a way, as to elude all attempts at following their course, the superficial surface of the tract does, however, present another example of the peculiar appearance I have noticed already : the fibres are here also twisted on each other, so as to give to the tract, when

Fig. 5.



perfectly stripped of all its membranes, and as it is about to form the commissure, a stranded or rope-like appearance. On performing the same tractions with these parts, as with those of the sheep and owl, the arrangement of the fibres, as represented in Fig. 5, was quite obvious ; the superficial fibres are here seen torn through, and taking the same course with regard to the tract and commissure, which they appeared to do, when viewed with a lens before disturbing the parts themselves. More deeply seated we observe, in the same figure, the arrangement of the internal fibres ; they may be seen in the

preparation distinctly, as they are represented in the engraving, by the unassisted eye, arranged in plates, the fibres of these plates interlacing with those of the opposite side.

It results, therefore, from the disposition of the parts now described, that the nervous fibres do not run in such a direction from their different points of attachment in the sensorium, as to

terminate in *corresponding* points of the retina ; as yet, such an arrangement has never been correctly and satisfactorily ascertained ; on the contrary, the very great probability is, that the fibres of the optic nerve, taking their attachment to the several points of the sensorium, so run in their course onward to the eye, as to form numerous interlacements with each other, in order finally to terminate in *opposite* points of the retina. This opinion is, I think, strengthened by the following facts : 1. Between the fibres of the optic nerve in the cephalopoda I have mentioned, there is a perfect decussation, so as to allow them to terminate in opposite points on the retina. 2. In the interior of these structures, as we ascend from the lower to the higher classes of animals, the complexity of their fibres becomes more intricate ; numerous interlacements are formed between them, both in the interior of the commissure and optic tract. 3. The superficial fibres, which may be followed to a certain extent, with the assistance of glasses, do not run forward in a direct line from the tract over the commissure, and then along the optic nerve to a corresponding point upon the retina, but in most of the cases I have examined, they observe a spiral course with regard to these parts, and in others with regard to the nerve itself, all, however, tending towards an opposite point on the termination of the nerve.

It may be inquired, what are the deductions to be drawn from these facts ? I conceive they are more or less intimately connected with the subject of "erect vision ;" we are led, therefore, to renew the inquiry so often proposed, why is it that we see objects in the erect posture, when we know from the observations of Kepler, and by direct experiment, that the rays of light coming from the upper part of an object must impinge upon, and so affect, the lower part of the retina, and *vice versa*, and in like manner too with regard to right and left ?

The solution of this question was attempted by Kepler and Des Cartes, and they thought that, from use, it is a conclusion which we draw in our own minds, from the decussation of the

rays of light, that the impulse which we feel upon the lower part of the retina comes from above, and *vice versa*. It may suffice to state, in objection to this theory, that our seeing objects erect is not a deduction of reason, but as Reid remarks, an immediate perception. How few are there who know any thing of the course of a ray of light through the eye, and yet are in perfect enjoyment of the faculty of seeing?

Berkeley associated the sense of touch with the sense of vision, and conceived that the errors of the latter were corrected by the former, and that thus by a regular process of education, or association between these two senses, we are enabled to judge of the erect position of objects. I conceive this explanation perfectly erroneous, for it supposes, in such a case as that operated on by the celebrated Cheselden, that as soon as the patient was restored to sight every object at first appeared inverted, but that afterwards, when his touch had educated his vision, they gradually assumed the opposite or correct position. Can we believe that this intelligent patient could have overlooked so interesting a fact as this, particularly when he so accurately noticed other sensations?

Reid observes, that "the pictures upon the retina are by the laws of nature a mean of vision, but in what way they accomplish their end we are totally ignorant;" and that "in the operations of the mind, as well as in those of bodies, we must often be satisfied with knowing, that certain things are connected and invariably follow one another without being able to discover the chain that goes between them." It is to such connexions the term "laws of nature" has been given.

"If," says Reid, "any philosopher should hereafter be so happy as to discover the cause of gravitation, this can only be done by discovering some more general law of nature of which the gravitation of bodies is a necessary consequence. In every chain of natural causes the highest link is the primary law of nature, and the highest link which we can trace by just induction, is either this primary law of nature, or a necessary consequence of it. To trace out the laws of nature by induction from

the phenomena of nature, is all that true philosophy aims at and all that it can ever reach."

To apply this reasoning to the matter before us, he further observes, "it appears to be a fact that every point of an object is seen in the direction of a right line passing from the picture of that point on the retina through the centre of the eye;" and "as this is a fact that holds universally and invariably, it must either be a law of nature, or the necessary consequence of some more general law of nature; and according to the just rules of philosophizing, we may hold it for a law of nature, until some more general law be discovered whereof it is a necessary consequence, *which I suspect can never be done.*"\*

Without stopping to controvert the opinions of this philosopher, it appears, even from his own showing, that we may by possibility arrive at some more general law than that to which we have already attained: this allows a further prosecution of the inquiry.

Müller, in his *Elements of Physiology*, vol. ii. p. 1172, observes: "The inversion of objects being a thing of which we never can become conscious in ourselves, *it is not probable that nature has made in the brain or elsewhere any provision for the correction of the error*, which would never have been known but for the institution of optical inquiries." This opinion goes much further in arresting anatomical investigation upon this subject, than any philosopher, even of the older schools, has ever gone. It is, notwithstanding, desirable in anatomy and physiology, as well as in other sciences, to go so far in our researches as nature herself invites us, and to endeavour, from the accumulation of facts of which we may become cognizant, to arrive as closely as possible at an explanation of the phenomena of life.

The theory of Sir Charles Bell deserves attention; it amounts to this, that we may judge of the position of an object, not by the impression made upon the retina (for it is not, he asserts,

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\* *An Inquiry into the Human Mind*, p. 153, &c.

the office of this membrane to give us ideas of position or relation), but by a knowledge of the particular muscle of the eye which is called into action, to direct the axis of vision towards that object.\*

I must confess I agree with Mr. Lord in thinking this theory, and the explanation of it which he offers, by no means satisfactory, for as Mr. L. observes, "we can very well distinguish the top from the bottom of a small object placed below us, though the same muscular adjustment enables us to take in both at once; consequently, we are deprived of that sense (the exercise of the several muscles), which in the other instance enabled us to correct the position of the image."†

Müller asserts, "that every thing being seen reversed, the relative position of the objects of course remains unchanged; the position in which we see objects we call, therefore, the erect position." (p. 1171.) Notwithstanding the weight which any opinion of this distinguished physiologist is deservedly entitled to, I cannot help thinking this theory is founded in error, for it places our visual perceptions in opposition to our tangible; and it would also suppose that the patient on whom Cheselden operated, would have different ideas of the same object from his sense of vision and his sense of touch. The theory of Berkeley is so far akin to that of Müller; but the former considered there was an error in the first instance, which the education by the sense of touch taught us to correct; whilst the latter does not admit the necessity for any such association as a corrective measure.

The law of "visible direction" has been adduced as an explanation of the fact: to this there are certain objections, but that made by Volkman, as quoted by Dr. Carpenter is, I think, perfectly valid; he asserts, that the lines of direction cross each other in a point, a little behind the crystalline lens; and that they will thus fall at such different angles on different points of the retina, that no general law can be laid down respecting them.

Other theories might be cited. I think it useless, however,

\* Bell on the Nervous System, p. 198.

† Popular Physiology, p. 451.

to occupy the reader's time by quoting them. It would appear to me, that *the correct impression made upon the sensorium is the result of the rays of light impinging on the terminations of the nervous fibres in the retina, which, crossing each other in their course backward, run to be attached to opposite points of the sensorium.* This opinion is, I think, countenanced by anatomical facts, which, the more they are examined, will, I doubt not, tend the more to its confirmation.

The recent investigations of Müller, and Ehrenberg, on the origin, course, and termination of nervous fibres, seem to bear directly upon this subject. The first named physiologist, speaking upon the point of nervous anastomoses, remarks: "If the primitive fibres never anastomose, it will follow, that the cerebral extremity of each fibre is connected with the peripheral extremity of a single nervous fibre only, and that this peripheral extremity is in relation with only one point of the brain or spinal cord; so that, corresponding to the many millions of primitive fibres which are given off to peripheral parts of the body, there are the same number of peripheral points of the body represented in the brain. If, on the contrary, the primitive fibres anastomose with each other in their course within the small fasciculi, and in the frequent anastomoses and plexuses of the nerves themselves, and do not merely lie in apposition; then the cerebral extremity of a nervous fibril will be in relation with very many peripheral points, the number of which will be equal to the number of primitive fibres which have coalesced; and since, the nerves are seen to anastomose in all parts of the body, there would, if the primitive fibres likewise anastomosed, be scarcely a single point of the body represented isolated and distinct in the brain; the irritation of a primitive fibre in a single point of the skin would necessarily be propagated through all the anastomoses; in other words, no local impression on a single definite point would be perceived by the brain; for the sensation of a single point evidently depends on the impression being conveyed by means of a single fibre to a single point of the sensorium." (Vol. i. pp. 600-1.)

Cruveilhier remarks in speaking of the structure of nerves : " In each nerve, the filaments of which the fibres are composed pass continually from one fibre to another, and enter into an immense number of combinations, *without ever becoming blended together.*" " Every nervous filament (and this is a fundamental point in their anatomy) has its central extremity in the cerebro-spinal axis, and its peripheral extremity at its point of termination. During the whole of its long course it only enters into new combinations, without ever being interrupted. *Continuity is a law of the structure of nervous filaments.*"\* He excepts the optic nerve so far as the interlacement of its fibrillæ is concerned. This may be true with regard to the ultimate fibrillæ of the nerve itself ; they may not form combinations with neighbouring fibres, as we see in other nerves ; but with reference to the larger fibres of that nerve, and those forming the optic tract, there cannot be a doubt of their decussation, if they are examined with sufficient care ; it is admitted to take place in the commissure ; and on the surface of the nerve after it has left the commissure, the spiral course which they then take may be seen even with the naked eye, in the instances I have already given.

It is admitted that as each fibre of a nerve has a perfectly distinct course from its origin, at a given peripheral point, to its termination at another given point situated in the sensorium, any impression made upon the former is carried uninterruptedly to the brain ; and may we not in addition conclude, that the interlacements and other peculiarities occurring in the different portions of the nerve of vision, such as have been detailed, constitute a special provision for the purpose of conveying to the sensorium a correct idea from the impression made upon the retina ?

During the course of these observations I have purposely omitted the use of the term "*picture on the retina,*" I cannot help thinking it unphilosophical, and from the details I have given, it is at all events unnecessary.

70, Harcourt-st., Dublin,  
December 12, 1842.

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\* Cruveilhier's Anatomy, vol. ii. p. 1026.

## BIBLIOGRAPHIC NOTICES.

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*Statistical Studies on the Results of Great Operations in the Hospitals of Paris.* By M. MALGAIGNE, Surgeon to the Bicêtre Hospital. 1. *On the Mortality after Amputations.* —(*Archives Generales de Medecine*).

DURING the last few years statistics have received much attention, not only from members of the medical, but from those of other professions; and though romantic expectations of their probable utility have, perhaps, been formed, yet few can doubt but that the positive results derived from investigations of this class have exercised, and will yet exercise, a powerful and beneficial influence. In medicine we are too much inclined to draw on our memories, and the fallacies derived from this source must have often been forcibly exposed to our own minds by the unexpected results of statistics. M. Malgaigne properly observes:

“Perhaps the most powerful of all the causes of error is the custom of demanding an account of our successes from our memory. All the statistics made from memory are horribly unfaithful; it is to their employment that we yet owe the astonishing illusions almost generally professed with regard to the real gravity of amputations.”

Of all statistics those relating to important medical questions are among the most useful; by the exact comparison of the mortality of one large institution with another, we are led to inquire into the causes of the deaths being more numerous in the one than in the other, and to the still more important research into a means of obviating these causes. Without statistics we might guess that one institution was the healthier, but if our guess proved right we would never proceed to apply our remedies with a tithe of the earnestness or decision impressed on us by the exact and positive conclusions of statistics.

M. Malgaigne proposes, in a series of papers, to lay before the professional public the results of all the great operations performed in the different Parisian Hospitals, the two first in

the April and May (last) numbers of the Archives are on amputations. The subject is one of great importance, and we cannot sufficiently praise M. Malgaigne for the fearless and honest manner in which he has discharged his disagreeable task; we say disagreeable, because it must be so to expose the frightful slaughter which his statistics prove to have been perpetrated in the hospitals of Paris.

The statistics of amputations present many questions of great interest and importance, which have occupied the attention and divided the opinions of surgeons ever since the application of ligatures by Ambrose Paré had made the operation a certain one as far as the mere manual performance was concerned. At one period most of the great surgeons of France and Germany were at issue on the question of immediate or secondary amputations after severe injuries, a question which has now received a sufficiently decided answer in favour of the first, not, however, till after a long interval and a continual swaying from one side to the other; the Royal Academy of Medicine, in 1766, having at one time crowned with its prize the memoir of Faure, in favour of secondary amputation. But it was not till forty years after that in France the balance finally settled in favour of immediate amputation, in consequence of the indisputable evidence in its favour adduced by Baron Larrey. The same conclusion has been arrived at in this country, supported by the extensive experience of Guthrie and other military surgeons. We may observe in passing, that in military practice the results after amputations, either primary or secondary, vary in a most remarkable degree. Mr. Alcock\* mentions that in the first sixteen operations performed for gunshot wounds in Spain, he only lost one, whereas afterwards the deaths amounted to one in two and one in three.

"Bilguer, a surgeon in the Prussian army, in 1761, declared," says M. Malgaigne, "that of this crowd of wounded whose limbs had been amputated during the first years of the seven years' war, hardly had there been saved *one or two*, and then demanded if amputation ought not to be, in some measure, abolished."

On the other hand, Faure declares, that out of sixty immediate amputations he only had two deaths; and Percy, who performed on the field of battle of Newbourg, ninety-two amputations, of which thirty-eight were of the thigh, twenty-one of the leg, thirty-three of the arm, says he only lost six, and had cured all the rest in twenty-six days; M. Malgaigne was him-

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\* Notes on the Medical History and Statistics of the British Legion of Spain, by Rutherford Alcock, K. T. S., Dep. Inspec. Gen. of Hospitals, &c.

self among the unlucky. The following is his own eloquent and graphic description of his first campaign :

" With these firm convictions that it was in some sort a law, that out of four amputations three at least ought to be saved ; and that on the field of battle, with immediate amputation and immediate union, that even greater successes might be hoped for, and after having received my last instructions from the illustrious chief of the military surgery of France, I set off in 1831 for Poland in the rank of surgeon of division, and I remained attached to the fourth division of infantry of the line during all the campaign. How brilliant were my hopes ! We had before us the spring, the season reputed to be the most favourable. We should have to deal with men inspired by the purest enthusiasm ; those, in the higher ranks, fighting for liberty and their country, the others in the lower ranks, for their country and their religion. Add, moreover, the enthusiasm of victory which had not yet failed the Polish arms ; every favourable chance was for us. I followed my division on different fields of battle ; I performed as many immediate operations as I could ; I united the wound of the stump immediately ; I hurried my wounded to the hospitals of Plock and Warsaw, sometimes in carriages well furnished with straw, sometimes in boats ; and as soon as I returned to Warsaw I hastened to inquire for those whom I had amputated,

" Here I can scarcely express with what profound consternation I was struck when to each new interrogatory the uniform reply was, '*Dead !*' During many days, during many nights a frightful idea pursued me : I had then sinned against some principle of art, since there where I hoped to save three out of four of my amputations, I had not saved perhaps one in four. Then I became anxious to know if my colleagues had been more fortunate than myself ; I interrogated them ; I went to see their amputated patients in the hospitals ; there was every where the same mortality. I will own I had not even the idea of making a regular statistic, I did not feel in myself courage enough to do it. Besides death here did not depend on the operator ; it was a very rare exception to see the amputated die of hemorrhage. We could not either accuse the treatment, for the hospitals of Warsaw being directed at this period by surgeons of all nations and of all schools, French, English, Germans, Italians, Americans, &c. ; every kind of treatment was put in use and each equally failed. We had in truth two great enemies to combat, *over crowding* first, and *hospital gangrene*, which was the consequence of it ; but where then are the military hospitals which after a great battle, or only near the theatre of the war, have been free from overcrowding or hospital gangrene ?"

This question, however, of overcrowding we have marked in *Italics*, because we conceive that the whole question of the different success of different surgeons, under otherwise apparently similar circumstances, turns on this. Facts every day are brought

forward, proving that overcrowding and bad ventilation, not only of the sick but even of the healthy, engender a bad state of the system, typhous fevers and other disorders; how then can we expect that the foul air in a crowded military hospital, full of suppurating and sloughing wounds, should not act injuriously on the large raw surface of the stump, and still more on the constitution already enfeebled by the double shock, first of the wound, then of the operation. Is it wonderful then, that the mortality is great? It would be well worth discovering in what circumstances those amputated by Baron Percy and Faure were placed, where the deaths were so few? M. Malgaigne is sceptical of their success, and why? because his researches have led him to discover nothing equal to it, but then these researches were all made in the crowded hospitals of Paris. In the *Maison Royal de Sante*, M. Paul Dubois adduces the success of his father to have been one in ten only; now here we may readily account for this success by the patients being placed in opposite circumstances to those in the military hospitals, as they pay pretty highly (2½ francs a day) for being in the general ward—a sufficient defence against overcrowding, and many of them, who pay a franc a day additional are in private rooms. Sir James Ballingall asserts, “that in the late war more human life was destroyed by accumulating sick men in low and ill-ventilated apartments, than by leaving them exposed in severe and inclement weather at the side of a hedge or common dyke.”

But to return to M. Malgaigne; finding that his own want of success was only equalled in the annals of science by that of Faure, who, after the battle of Fontenoy, the wounded being sustained and animated by victory, yet had only 30 or 40 cures out of 300 amputated; and Bilguer, also surgeon of a victorious army, and who even saved less, he says:

“Then a doubt, powerful, immense, irresistible, took possession of me; I demanded of myself if what I saw could pass for an exception; if those brilliant successes which I had hoped to equal, were real and authentic; I put myself in revolt against this dictum of the masters that I had hitherto blindly worshipped; and from that day dated the spirit of scientific independence, of which perhaps I have sometimes given proof. I returned to Paris thus disposed; following assiduously the clinique of Dupuytren, I easily perceived in the days of June, 1832, that this illustrious master was not more lucky than his humble disciple. The mortality among his amputated was so great that he judged it necessary to explain it by the demoralization of the wounded civilians who had been just conquered; and he appealed as a testimony to his success in 1830, when the joy of the triumph had so facilitated the cures. It was necessary to refer to this memorable year, and to reckon the cures.”

M. Malgaigne found that there had been in  
11 amputations of the thigh, 9 deaths.  
3        "       of the leg, 3 deaths.  
10       "       of the shoulder or arm, 5 deaths.

"Thus, in the amputations of the arm in this victorious year, Duputren had saved the half of his amputations; that was not so very brilliant; but in fourteen amputations of the inferior extremity, he had twelve deaths; we could hardly lose more at Warsaw.

"And in reckoning together all the operations, immediate or consecutive performed for gun-shot wounds, at Paris, by such men as Dupuytren, Richerand, M. Larrey and M. Roux, in circumstances assuredly better than those of the field of battle, there had been in 69 amputations 42 deaths, and in counting only those of the lower extremity in 40 amputations 28 deaths."

We have hitherto accompanied M. Malgaigne in his inquiries into the rate of mortality in military practice chiefly, and we now approach a subject of more general interest, the mortality after amputations in the civil hospitals in Paris. Before making any strictures on the number of deaths we shall lay before our readers M. Malgaigne's statistical results.

1. In 201 amputations of the thigh, for all causes and in every sex and age, there were 126 deaths, about 62 in the 100, nearly two-thirds!

By a very important division of the amputations into those performed for injury, and those on account of organic diseases, he found that of the cases amputated for injury the enormous number of 75 per cent. had died, while the amputations for organic disease gave 64 per cent. of deaths in men, and 53 per cent. in women.

2. Amputations of the leg. These amputations were to the number of 192, in which he reckoned 106 deaths, about 55 in the 100; giving one-ninth less deaths than the amputations of the thigh.

In this calculation there were 112 amputations for organic lesions, in which there were only 55 deaths, or one-half; the amputation of the thigh had three deaths in five.

In those for injury, 79 amputations, 50 deaths, near two-thirds; under the same circumstances in the thigh there were three-fourths.

4. Partial amputations of the foot give, in 38 patients, nine deaths, 24 in 100; out of this number nine were for injury, out of which there were six deaths; just two-thirds, nearly as great a mortality as that of the leg.

5. Amputation at the shoulder joint. In 13 cases 10 deaths; seven were for injury, and they all died.



mind is occupied with the most pleasing ideas. Next to the spring he preferred the autumn. M. Velpeau also gives the preference to these two seasons; statistics, however, are stubborn things, and they have taught M. Malgaigne that amputations are more fatal at these periods of the year, except to children, to whom the spring was the most favourable; to adults, winter and summer were pretty much on a par.

Not having space to follow M. Malgaigne through his interesting statements of the different rates of deaths in each of the large hospitals of Paris, we hasten to consider the cause of the great mortality. Thinking that perhaps the plan of treatment adopted by particular surgeons might account for the difference between some of the hospitals, he says:

"Having followed, in different hospitals, the surgeons whose success had appeared to me the most remarkable, I have seen, that, in changing the hospital, they did not transport with them their good fortune, but that certain hospitals continued to save their amputated, and others to lose them in spite of the change of surgeons."

This fixed the mortality on some local circumstance in the hospital itself. M. Malgaigne believes the cause to be two-fold:

"Why, says he, are the hospitals more destructive after operations than private practice? It is generally thought, that it depends on the assemblage of sick, who vitiate the air, while in the city there is only a single person operated on in a single room. That is partly true; and I will presently show facts which demonstrate, that patients dispersed in smaller chambers get well better than in larger ones. Moreover, the super-position of stories adds to the danger, the emanations from the lower stories mix with the air, which penetrates by the openings to the upper rooms. People have stopped here,—but I think there is another cause, which is this, that the fewer patients the surgeon has to see, the better he sees them, and the more attention he pays. Thus private patients are better attended than hospital ones, and thus in an hospital, the less a man has to do the better he does it. Here are the very curious documents on which my conviction is founded, I was most anxious to compare hospitals in other respects equal, and I have begun by studying the mortality of institutions especially devoted to those affected with syphilis."

For ten years they treated in the Hôpital des Vénériens, 2,200 annually, and the mortality was one in forty-seven to forty-eight; but in 1802 to 1803, they more than doubled the admissions, having admitted 4,811, and what was the result? the deaths increased to the frightful amount of one in fifteen; a fact worthy indeed of the attention of every medical man. Here follows one still more important, as it presents the antidote as well as the bané:

"On the 1st of July, 1809, the administration had opened a 'maison de santé' for those affected with syphilis, who were able to pay; the house was even next to the Hôpital des Vénériens itself; the attendance, medicines, &c., were the same. The surgeon-in-chief of the 'Vénériens,' Cullerier, was also that of the Maison de Santé. The only difference consisted in the number of beds, and the laying out the house; there were nineteen rooms, containing each two or three beds, and fourteen rooms with one bed only; and the number of sick increasing annually, never exceeded, until 1814, the number of 269. Now, in a total of 923 sick, there only died thirteen, one in seventy-one; a proportion remarkable enough, as nearly all the sick were of the male sex, who in the neighbouring hospital lost one in fifty-six.

The following lists help to complete the demonstration :

1814. Hôpital des Vénériens,	3496 patients,	deaths,	1 in 70.
„ Maison de Santé,	344	„ „	1 in 142.
1817. Hôpital des Vénériens,	2362	„ „	1 in 60.
„ Maison de Santé,	316	„ „	1 in 316.
1818. Hôpital des Vénériens,	3094	„ „	1 in 50.
„ Maison de Santé,	356	„ „	1 in 178.

But there is even a more strikingly illustrative fact than this :

"In 1835, there entered the Hôpital du Midi 4056 individuals; the mortality was, for men, one in 212; for women one in 138; for children, one in eight. These are admirable proportions, and it is scarcely allowable to hope for better. Now in 1836, the women are removed to Louvaine; the population is lessened in each service of the hospital; immediately the mortality is lessened also. The surgeons of the Hôpital Midi have this year only 3651; they only lost one in 250 for men, and there was not a single death in 328 women."

M. Malgaigne then gives equally conclusive facts with respect to the Hôtel Dieu, the mortality having diminished in a remarkable manner, as the number of patients admitted was lessened. Besides this, another means of proving the same conclusion on a large scale, presented itself in the state of the hospital arrangements at the time of the invasion of Paris, in 1814, when all the hospitals of Paris were crowded with wounded; he says :

"The Prefect of the Seine, urged by the Council of Hospitals, put at their disposal, the 'Abattoirs of Rouse, Montmartre, and of Meunilmontant.' One knows that these 'abattoirs' are composed of isolated chambers, separated by large streets, with a single floor or story: they were hastily fitted up to receive the wounded, and they served successively as asylums for the wounded French, and the wounded

enemy. The following is the striking contrast between the close, over-crowded hospitals, and the open abattoirs, with their small separate rooms.

"The mortality of the wounded French was,  
At the Hôtel Dieu, 1 in 5.  
At La Pitié, 1 in 5.  
At St. Louis, 1 in 8.  
At the Vénériens, 1 in 9.

"While in the three abattoirs it was,  
At Rouse, 1 in 10.  
At Montmartre, 1 in 12.  
At Menilmontant, 1 in 13.

"These results were so striking, that the administration was affected by them; the following remarkable compte-rendu of the Council General of Hospitals in 1814, was issued in the following terms:

"That the use made of these abattoirs for the service of the sick, had proved their structure as much fitter for this new destination, than any of the hospitals then existing.

"2. That experience had thus sanctioned the justice of the views of Tenon and Bailly, in their admirable reports on the Hôtel Dieu, and the utility of the division of hospitals into separate apartments, the first idea of which is due to M. Leroy, an idea, which for the future, added the Council, will be followed for the construction of all the hospitals, in which it is wished to unite the desirable conditions of health and convenience."

M. Malgaigne supports his other opinion, that the more numerous the hospital staff the less the mortality; but we have no space fully to detail his observations on this head, nor some interesting facts deduced from the mortality among the wounded at the same period, 1814, that a stimulating and nourishing regimen was the most salutary. We have already been led by the interest and importance of the subject further than the usual limits allotted to Review in this periodical, but we do not think our readers will find fault with us for so doing. M. Malgaigne's researches do not bear on amputations alone, but their influence extends to all the questions connected with the proper disposal of large numbers of sick, and now when poor-houses are springing up through all parts of the land, and ignorant guardians or economizing commissioners, are striving to crowd them to their extremest capabilities, blind or careless of the consequences, and often in spite of the anxious remonstrances of the medical officers, it becomes of the greatest consequence to furnish the latter with every fact connected with the subject, to enable him to make a firm stand against the strong current of prejudice and ignorance so often setting against him.

*On a Variety of False Aneurism.* By ROBERT LISTON, F.R.S.,  
Professor of Clinical Surgery in University College, &c.

THERE are some abscesses in the neck which a surgeon proceeds to open with caution and anxiety,—those acute, deep-seated collections of matter under the fascia at the upper part of the neck, for instance; there are others, on the contrary, such as strumous abscesses, that are so commonly presented to his notice in the necks of children, that he is apt to examine them cursorily, and open them with a kind of rash decision, engendered by familiarity. Mr. Liston's case presents a striking example of the danger of this, and a warning to approach every abscess situated in a region so crammed with important parts as the cervical is, with care and attention. We cannot be too thankful to Mr. Liston for the manly manner in which he has detailed to us his unfortunate case, so pregnant with instruction; if Mr. Liston, a surgeon whose name is associated with some of the most important improvements in operative surgery, could commit a mistake, how careful should every one be, and where so great a surgeon has stumbled, how cautiously it behoves us to look to our steps.

The following are Mr. Liston's remarks, with the case :

“ My attention has lately been particularly directed to the subject of communications between large blood-vessels and the cysts of abscesses, in consequence of having, a few weeks ago in my hospital practice, met with a remarkable case in which the carotid artery opened into a large abscess in the neck. My conviction has always been with those who hold that ‘ there is often more of instructiveness in an unfortunate case than in a fortunate one ;’ and, accordingly, I venture to lay the particulars of the case referred to, before the society, as not altogether devoid of practical importance, and therefore of interest to the members. I have referred to other cases in confirmation of my views, and have thrown together a few remarks suggested by a consideration of the subject generally.

“ Hæmorrhage from the cyst of an abscess, to a slight extent, often follows the evacuation of its purulent contents, more especially when the operator evinces an anxiety to empty the cavity as far as he possibly can, by forcibly squeezing and compressing its sides. The blood is then furnished by the vessels of the lining membrane, whose connexions with its bed are broken up; the bleeding in other instances is attributable to the loss by the vessels of their accustomed support. In either way the cavity is filled with blood, which may ooze from the opening for a time; but coagula are formed by and by, and breaking down at last, are discharged with the secreted pus. Bleeding from abscesses may also take place from vessels, arterial or venous, wounded in the operation of opening them. All such effusions are in genera

speedily arrested, by attention to position, and by pressure applied over the opening or to the surface of the abscess. Larger arterial trunks on which abscesses encroach, are generally well protected by a deposit of coagulable and organised lymph around and about them, so that hæmorrhage from them is comparatively rare; the nerves, on the contrary, are often stripped of their cellular sheaths, and their fibrillæ are macerated and detached. Occasionally, however, all the parts in the neighbourhood of an abscess appear to be dissected, the coats of arteries among these becoming denuded by the extension and pressure of the purulent deposit. The requisite supply of blood to the coats of the vessels is thus diminished or entirely cut off, and as a consequence, ulceration and sloughing, with perforation from without, ultimately occur. This has happened in some instances before the matter had wrought its way to the surface, and before the opening had been made by the surgeon. In other cases, again, the vessel has given way some time after the pus had been evacuated. In the cases which have come under my notice, the abscess has lain beneath the vessel, which has been pushed forwards upon the cyst, and put very much upon the stretch. This stretching of the vessel, together with the natural tendency of purulent matter to the surface, may so far account for the giving way of its parietes. Under any circumstances such an occurrence as the perforation of a large artery by ulceration is very alarming, and calls for the best directed and most energetic efforts of the attendants to prevent an immediately fatal result. But the existence of a communication between a large vessel and the cyst of an unopened abscess, it may readily be conceived, cannot always be easily ascertained. The history and progress of the swelling, indeed, its situation, form, &c., will all generally be very different from those of a true aneurism; still there may be no signs, or if any, very slight ones, of the existence of a communication with an arterial trunk. In cases of large abscesses, the contents of which have been partially evacuated, and into which blood is afterwards poured, so as to distend the sac enormously, the surgeon may perhaps, for a time, be led to think that the bleeding is from some inconsiderable branch, and may only at last be convinced of the danger to which his patient is exposed, after repeated hæmorrhages have taken place from the opening. Perhaps the blood escapes at first from a minute aperture in the vessel, and drains but slowly into the cyst. It coagulates, and by slight pressure on the opening, the flow is arrested. But as the ulceration extends and the opening enlarges, or as the patient rallies and the circulation becomes energetic after each renewal of hæmorrhage, the bleedings occur more frequently, and in a more alarming way, and cease only upon the patient falling into a state of complete syncope, or upon accurate pressure being made over the trunk of the vessel from which the blood is flowing, at a distance from the disease. The first case, the particulars of which I shall detail from the records of the house, occurred a short since in University College Hospital.

“CASE I.—G. A., æt. nine, had been a healthy infant, but about

six years ago he suffered from severe illness, and was left in a very reduced state. About two months back he had a violent cough, together with considerable fever; at this time a small swelling was first observed in the neck, immediately below the right ear; this was merely fomented and poulticed. It increased gradually and slowly until within three or four days of his admission into the North London Hospital, when its progress became more rapid and its shape irregular. He presented himself October 20th to Mr. Liston, at the usual visiting hour, having a tumour at the angle of the jaw on the right side, extending backwards as far as the posterior border of the sterno-mastoid muscle (the upper part of which was pushed forwards), downwards to within an inch of the clavicle, and forwards to about half the length of the horizontal ramus of the lower jaw. It projected into the mouth between the arches of the palate, impeding in a great degree both respiration and deglutition. Its most prominent point was posteriorly and superiorly at the outer border of the sterno-mastoid. Indistinct fluctuation could be felt, and there was slight pulsation in it immediately over the carotid artery; but on grasping the sides of the tumour no pulsation could be discovered, nor could any be felt inside the mouth. Mr. Liston made a small puncture into the tumour under the impression that it contained matter; a gush of arterial blood followed the operation, and about four ounces were lost in a few seconds; the wound was closed by hare-lip pins and the twisted suture, and the bleeding thus checked. Mr. Liston determined to tie the carotid on the following day.

“October 21. No hæmorrhage during the night, but cold was constantly applied, as the tumour seemed to be very tense. This morning the carotid was tied. The patient being placed on the operating table, an incision about an inch and a half in length was made transversely over the sternal extremity of the clavicle, and another upwards, and at right angles to the first incision, over the trachea. A V-shaped flap was turned upwards and outwards; the sternal attachment of the sterno-mastoid being exposed, was cut across; the muscle was very black, as if the sheath were occupied by effused blood. The sterno-hyoid and thyroid muscles were next exposed, after some dissection. A small vein was cut, which bled freely, but after a little time this hæmorrhage ceased without the application of a ligature. The muscles over the trachea were then cut across, and after a troublesome dissection the carotid was exposed a little above its origin from the innominata, and tied. The great difficulty of the operation arose from the necessary smallness of the incision. The tumour projected downwards so low in the neck that it was impossible to extend the incision upwards; and the artery, which appeared to be at a very great depth from the surface, was to be sought for at the bottom of a small hole. The flap was laid down, and retained by some isinglass plaster. The boy complained very little after the operation. The swelling very soon became firmer and less tense, and the movements of the jaw, which before were much restricted, were now more

free and less painful. The pupil of the right eye, which before was contracted and partially insensible to light, was now restored to its proper functions. The patient slept soundly all the night following the operation."

Nothing particular occurred till

"November 3rd.—Five P. M. A few minutes since, while the boy was eating a piece of bread, a sudden gush of arterial blood took place from the wound in the fore-part of the neck, the ligature being still firm. The hæmorrhage was suppressed by plugging the wound with lint. A considerable quantity of blood was lost. Hæmorrhage returned six times after this; the last one left him in a state of perfect collapse, from which he never recovered, and on November 5th he died at five P. M."

In the *post mortem* examination there appeared considerable fulness on the whole of the right side of the neck, but much less than shortly after the operation. Pressure caused a quantity of dark grumous blood to ooze from the tumour. The lymphatic glands were found enlarged and matted together by lymph:

"The ligature was found to have been placed close to the origin of the carotid from the innominata; it was not completely separated, a small portion of the external side of the artery still remaining entire. The proximal end of the vessel was quite open, and admitted a large sized probe; there had been no attempt at the formation of a clot, or, if any had been formed, it must have been expelled with the blood. The distal end of the vessel was sealed by a firm coagulum, and around the situation of the ligature was a considerable deposit of firm lymph. The arteries arose from the arch in the usual manner. The dissection in the superior part of the neck was now proceeded with. The parotid and sub-maxillary glands, &c., and the side of the lower jaw having been removed, a large tumour was brought into view, extending from the side of the trachea and pharynx, outwards as far as, or a little beyond, the external border of the sterno-mastoid; upwards to the base of the skull, and downwards to about an inch below the bifurcation of the carotid; behind it was limited by the spine and its muscles. Over the anterior surface of the tumour could be traced the carotid artery, free to within three-quarters of an inch of its point of division, where it became firmly connected with the swelling. Both the external and internal carotid were connected to the tumour for about an inch from their division; the internal, however, was the more intimately attached. The internal jugular vein passed over the anterior aspect of the tumour, but the vagus nerve was found to issue from behind. Both the internal and external carotid were now cut through, the former at its entrance into the bony canal in the temporal bone, and the tumour was dissected from its situation, turned

downwards, and, together with the heart and arteries, removed from the body.

An incision was then made into the posterior part of the tumour, which was found to contain a quantity of dark grumous blood, external to which was a thin layer of organized lymph which entirely lined the parietes of the cyst. A probe was passed down the internal carotid artery, and found to enter the cyst just opposite the division of the common carotid; this point was, however, obstructed, a mass of coagulable lymph almost entirely blocking up the entrance. The parietes of the tumour behind were about a line or more in thickness, but on the outer side, on the aspect adjacent to the puncture, they were much thinner. They appeared to be composed of three layers differing in character, but organically connected together. The outermost layer consisted of condensed cellular tissue having portions of the surrounding structures attached to or imbedded in it. The middle layer, which was not so evident on the outer side of the tumour, was very dense and opaque, so that it appeared like a distinct white line on a section of the parietes of the tumour. The innermost layer was soft and pulpy, semi-transparent, and of a pale dirty red colour; its inner aspect, forming the inner surface of the cyst, was smooth, and for the most part even; but in some points, and especially at the posterior part of the cyst, it presented a fasciculated appearance like the interior of the auricles of the heart, or of a fasciculated bladder, only not so well marked; it consisted, as I have said, of a flaky lymph-like substance throughout. Opposite the outer part of the tumour (where its parietes were thinnest), this substance was flocculent and broken, and contained patches of a bright yellow colour; here it was not distinctly laminated, and it adhered rather firmly to the middle layer of the cyst, but in other situations it was easily separable into laminæ, and was not so firmly adherent. The cavity of the cyst contained a quantity of grumous blood. The common carotid and the internal and external carotid were firmly attached to the front of the tumour. The opening by which the cyst had communicated with the artery, had been about three lines wide and two and-a-half lines long, and was situated at the bifurcation of the common carotid. It was now completely closed by a firm clot, in which no perforation was visible, so that the probe which had been passed down the internal carotid into the cavity, must have been forced either on one side of this clot or through it. On the side next the vessel, the surface of the clot was concave, broken in the centre, but smooth towards the circumference, where it was closely adherent to the margin of the opening in the carotid artery. The opposite side of the clot was convex, and projected into the cavity of the cyst. On making a vertical section through the artery, the walls of the tumour, and the clot, the latter was seen to be composed of fibrinous laminæ. The edges of the opening in the vessel were found to be well defined and slightly everted; the external coat of the artery was distinctly traced, and afterwards dissected from the middle coat quite up to the margin of

the opening, where it terminated abruptly, not being reflected on to the inner surface of the tumour. The coats of the vessel showed not the slightest dilatation at the part where it was connected with the tumour. The vagus nerve descended in front of the tumour on the outer side of the internal and common carotids. On coming into contact with the tumour it was much enlarged, and was firmly connected with the outer and middle layers of the wall of the cyst. The filaments of the nerve were spread out, and some of them were merely separated from the cavity of the cyst by the internal soft pulpy layer; the nerve passed off again from the lower part of the tumour. A portion of the spinal-accessory nerve was attached to the outer side of the tumour, and the superior cervical ganglion of the sympathetic was deeply imbedded in its posterior surface."

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*Epidemic of Typhous Fever, caused by overcrowding in the Prison at Rennes.*

IN the January Number of the Archives for 1842, there is an important memoir by M. Landouzy on this subject, and which served as the basis of an Essay on the *questio vexata* as to the analogies and the differences which exist between typhus and typhoid fever, but as our limits do not afford space to discuss this question, we shall merely extract such portions of the Essay as bear on the general characters of the disease, and the presumed deficiency of sanatory regulations, which gave rise to it; and we consider it of essential importance to notice these circumstances, as we are confident that the health of all large Institutions, particularly such as prisons and workhouses, depends in a great measure, on attention being properly directed to these points, which are too often neglected, as being of minor importance.

The fever appeared in October, and raged for seven months, during which time 138 persons were attacked with it; of these 103 were prisoners, of whom 8 died; and 35 were persons employed about the sick, and who contracted it from them; of these 9 died, a fearful mortality as compared with that occurring among the prisoners, amounting to a difference of about 1 in 4 in the former, to about 1 in 13 in the latter: i. e. a difference of 19 per cent.

I shall only consider, as affected by the way of contagion, those who were attacked while attending on the sick, after being removed from the prison; and thus may be considered as beyond the sphere of any epidemic influence. Of persons of this class, were attacked,

3 physicians, of whom died	1
6 pupils, „ „	1
1 apothecary, „ „	1
1 almoner, „ „	1
12 nurses, „ „	2
8 servants, „ „	1
4 gendarmes, „ „	2
<hr/> 35	<hr/> 9

None of the physicians lived in the hospital, and the pupils' apartments were separated from the ward by a very large yard, so that we may fairly attribute their disease to contagion also.

The prominent symptoms of this epidemic were, 1st, Stupor, characterized by profound prostration of the physiognomy and intellect, *without perversion of ideas*; this was evident on the second or third day, or even sooner.

2nd. Delirium, which occurred from the third to the eighth day, and was generally of a mild form.

3rd. Severe frontal headach, which was always present.

4th. Subsultus was present in the severe cases.

5th. Great prostration of strength from the commencement.

6th. Suffusion of the conjunctiva, supervening on the sixth or seventh day, with peculiar glistening of the eyes.

7th. Peculiar odour like that of mice; this had been noticed by Mr. Gerhard, in his account of an epidemic at Philadelphia.

8th. Petechial eruption, which appeared on the fourth or fifth day, and which consisted of small red, or violet-coloured ecchymoses, not elevated, nor disappearing under the pressure of the finger, thus differing from the *taches rosées lenticulaires*. They always appeared on the chest, often on the abdomen, or on the extremities, and in three cases, on the face. The two eruptions often coexisted, but the *taches rosées* were confined to the chest, and upper part of the abdomen, and never appeared before the tenth or twelfth day, and sometimes re-appeared during convalescence.

Sudamina appeared but in six cases.

9th. Diarrhœa only occurred in four cases (at the commencement), and they recovered; this is important, as distinguishing it from the typhoid fever, as Andral, Chomel, Louis, Bouillaud, establish the occurrence of diarrhœa *in the commencement*, as pathognomic of the latter disease: There was no tympanitis, or abdominal pains.

In all the cases there was sibilant rale.

The pulse was in general soft, full, and regular. Epistaxis occurred in eight cases, but in none previous to the eighth day.

Two cases of parotid abscess occurred, at an advanced period of the fever, and both recovered.

In no case were there escars formed, although some of the patients remained forty days in bed.

*Pathological Appearances.*—M. Landouzy could only examine six of the fatal cases, but in all of these he found the intestinal lesions which are pathognomic of typhoid fever, viz., great development of the glands of the small intestines, with ulceration; and he lays great stress on this, as furnishing a serious exception to the law laid down by Gerhard, Shathuch, Valleix, as to the absence of intestinal lesions in epidemic typhus.\*

The spleen was perfectly natural, and thus marked a strong distinction between this and the typhoid fever, in which the spleen is always found to be enlarged.

A remarkable feature in the epidemic was, that it broke out, and confined itself to the cells of the accused, which differed in no other respect (as regards external circumstances) from the cells of the condemned, except in being more crowded at the time; the former, which were calculated to contain from ten to twelve persons, had (when the fever broke out) fifteen or sixteen crowded in them, for the number of prisoners, which in general varied from 130 to 150 (and of whom the average sickness amounted to two per month), had increased to 180 or 190, during the two months preceding the fever. The general sanitary regulations, with regard to food, exercise, and cleanliness of the prison, are discussed, and pronounced to be satisfactory; as also the state of the atmosphere, and having entered into all these details minutely, M. Landouzy concludes by stating that the fever was caused by the crowded state of the prison, and in this opinion we fully concur, not only from the result of our own experience of the dangerous consequences resulting from overcrowding institutions, but also from the evidence afforded by Ferriar, Currie, Tweedie, Polloni, and latterly of Dr. Southwood Smith, of the London Fever Hospital, in his Report to the Poor Law Commissioners.

Dupuytren, in a Report made to the Institute of France, on the subject of fever, made these observations: "In wards, the same in every respect, kept with the same attention to cleanliness, under exactly similar circumstances, it only requires to increase the number of patients, to cause hospital gangrene to

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\* It is strange that he appears not to remark that he only examined the bodies of the prisoners, whose fever was evidently of an endemic origin, but he did not examine the bodies of those who contracted it by contagion, and which might have thrown some light on the subject.

make its appearance on the surface of their wounds, which would disappear again on the number of patients being reduced." He also asserted that he could cause contagious fever to appear and disappear in the same manner.

Dr. Hudson, Physician to the Navan Fever Hospital, in his valuable inquiry into the Sources and Mode of Action of the Poison of Fever, also supports the opinion as to the generation of fever from over-crowding: we are, therefore, surprised to find Dr. Watson, of London (in his Lectures on Fever, published in the Medical Gazette for August, 1842), thus expressing himself:

"I must refer you for good evidence that it is not so engendered (i. e. by over-crowding), to Dr. Bancroft's book on the Yellow Fever. He shows that typhous fever does not spring up in places where it could scarcely fail to appear if that theory were true."

Now Dr. Bancroft has rested much of his argument upon the fact, that typhous fever never is generated in the most crowded slave ships; but this has been well accounted for by Dr. Fergusson.

1st. The poor creatures, being in a state of utter nakedness, are thereby saved from the accumulation of the infectious principle, under the form of formites.

2nd. The high temperature, which is always destructive to the poison of typhus.

The absence of fever from the huts of the Fins and Russians may be explained in the same way, for (writes Dr. Fergusson) the Russian peasant feels little of moist cold; his habitation is close and ill-ventilated, but he heats his stove day and night to an astonishing degree—to that degree with which humidity is incompatible, and no contagion can exist. The Esquimaux Indians, those children of the arctic circle, filthy even to a proverb, are said to know nothing of typhous fever. They live in their snow-built huts, the driest of all habitations, heated to a high degree in the centre, by a large lamp of whale oil.

In fact, the proofs which have been adduced against the generation of fever by overcrowding and accumulation of human effluvia, are of a negative kind, and ought to be received with great hesitation, where the inquiry (in the words of Dr. Hudson) "is one of the most important connected with the subject of fever, and bears strongly, in its consequences, upon science and humanity."

*Manual of Diseases of the Skin. From the French of MM. Cazenave and Schedel, with Notes and Additions.* By T. H. BURGESS, M.D., &c. Duodecimo, pp. 320, 1840.

IN the preface the translator says :

" A manual of diseases of the skin, in a convenient form, and at a moderate price, has been long wanted by students, and the junior members of the Profession. To supply this desideratum, I have rendered into English the excellent practical compendium of MM. Cazenave and Schedel, a work which contains the substance of M. Biett's views and experience in cutaneous pathology, and which has passed through several editions in France.

" M. Biett, during his life, enjoyed the highest reputation as an authority on diseases of the skin ; and the only record that we possess of his extensive experience, is contained in the present manual of MM. Cazenave and Schedel, with which I have been long familiar. It was my text book during the two seasons of my attendance at the Hospital of St. Louis, under M. Biett, and since that period I have had increased opportunities in this country of testing its value as a practical guide in the treatment of cutaneous affections. I can conscientiously say that I know of no other work of a similar kind, either in the English or any other language, which is preferable to that of MM. Cazenave and Schedel, nor one which would answer our present purpose so well. The clear and methodical manner in which the diseases are arranged, and the concise and simple style of the work, contrast favourably with the vague and obscure descriptions generally found in treatises on diseases of the skin."

There is a very instructive introduction, containing a general description of all the diseases to which the skin is liable, their predisposing and exciting causes, and a comprehensive sketch of their treatment ; as also the classification adopted in the work, which is that of Willan, with some modifications ; lupus, syphilitic eruptions, and some others being put in additional orders. The following extract of the description of a very obstinate form of eruption will give an idea of the style of the work :

" MENTAGRA, OR SYCOISIS.

" SYN.—*Varus mentagra ; mentagra ; Dartre pustuleuse ;*  
Chin welk.

" Mentagra is characterized by successive eruptions of small acuminated pustules, closely resembling those of acne, scattered upon the chin, and other parts occupied by the beard, the submaxillary region, and the lateral parts of the face. Mentagra is an essentially pustular affection. It has, however, been mistaken by Willan, Bateman, and Plumbe, who supposed that tubercles were the elements of the disease,

whilst they are merely consecutive, and do not exist in all cases ; and moreover, the eruption is pustular, from its earliest appearance.

"*Symptoms.*—Sycosis most frequently occurs in adults, sometimes in persons of advanced age. It is generally preceded for several months, or even for years, by minor eruptions, on the upper lip, on the chin, or submaxillary region, which quickly disappear. The pustules shrink, and are speedily replaced by thin scabs, which dry and fall off in a few days. At a more advanced period, the eruption becomes more abundant, and then it first attracts the patient's attention. It often appears immediately after a debauch.

"The pustular eruption is generally preceded by redness, heat, and a painful degree of tension about the chin. Small red points soon make their appearance, which become pustular between the first and third days. The pustules are acuminate and distinct ; but when they are numerous, and grouped together, the upper lip, and a great portion of the chin, are covered with small prominent tumours, containing a yellowish fluid, and traversed through the centre by a single hair. They remain in this condition for six or seven days, giving to the countenance a very peculiar appearance, and at length burst, and terminate in slightly-thickened brownish crusts ; but there is never any exudation, as in impetigo. The scabs fall off imperceptibly, and the disease subsides altogether in the course of ten or fifteen days, if a new eruption does not break out.

"It usually appears in the form of successive partial eruptions. The skin becomes inflamed, either in isolated patches, or over an extended surface. When the eruption is general and extensive, the subcutaneous cellular tissue, as well as the skin, is deeply inflamed. There is considerable heat and pain, and even the scabs are in some places thickened and matted in the middle of the hair. The extent of the eruption is variable ; it is sometimes confined to the upper lip, to one side of the chin, to the side of the face, or it may appear at once in all these regions. Frequently a number of pustules form, and disappear, and are replaced by others at different intervals. In these cases the skin is rugous, the epidermis is elevated in the form of small whitish exfoliations, in the centre of which new pustules are occasionally developed.

"There is another rather peculiar variety of the complaint, which appears in old people, and in persons whose constitutions have been deteriorated by dissipation or disease, but who are apparently strong and healthy, characterized by chronic tubercular indurations of the skin. These tumours are of variable form and size. They are sometimes almost as large as a cherry. In other instances, even after the development of the eruption, the inflammation continues to increase in intensity, and pustules, scabs, scales, and tubercles, cover the lower part of the face, which is swollen and puffy. They appear on every part of the face where the hair grows, and pustules frequently form on those tubercular indurations ; but Mr. Plumbe was not correct in

saying that the latter contained pus. The cellular tissue is sometimes deeply involved, especially when the inflammation is intense.

"When the disease has continued for some time, the bulbs of the hair become affected, and the beard often falls off to a considerable extent; but it generally reappears when the disease subsides, and soon resumes its original strength and colour. The indurations gradually disappear after the eruption has ceased. The duration of the disease is very variable. In some cases it resists every kind of treatment, and continues for an indefinite length of time. It is also very apt to reappear, particularly in persons fond of good living.

*Causes.*—*Mentagra* chiefly attacks young people of a sanguineous and bilious temperament, who have much beard. It generally appears during spring and autumn; and persons who are exposed to strong heat, as cooks, smiths, founders, &c., are particularly liable to be attacked. Women are rarely ever affected. The better classes, and persons of cleanly habits, are, however, also liable to it. This disease has been often attributed to the use of a dirty razor, but seemingly without much foundation. Nevertheless M. Foville has seen several of the inmates of the lunatic asylum at Rouen, attacked successively with *mentagra*, after being shaved with the same razor. It is evident that the action of the razor will aggravate the irritation of the parts when once the eruption is formed.\*

"*Diagnosis.*—The differential diagnosis of *mentagra* is very important. Various eruptions appear on the chin, which may be mistaken for it; as, for example, *ecthyma*, *impetigo figurata*, and syphilitic tubercles. In *ecthyma*, the pustules are larger, and the bases more inflamed than in *mentagra*. *Ecthyma* is never accompanied with the circumscribed indurations of the skin and cellular tissue; and its scabs are broader, thicker, and more adherent. The pustules of *impetigo figurata* are disposed in groups, and are but slightly prominent, whilst those of *mentagra* are distinct and acuminate. The pustules of *impetigo* burst about the third or fourth day, and give issue to a considerable quantity of fluid, which is promptly converted, by desiccation, into broad, thick, yellow scabs. Those of *mentagra* burst between the fifth and seventh days and are succeeded by dark brown, dry, and thin crusts. Besides, the tubercular indurations of *mentagra* are never observed in *impetigo*.

"These characters may be very difficult to recognize when the eruption is extensive, the inflammation severe, and the pustules more or less agglomerated. It will then be judicious to suspend our opi-

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[\*M. Gruby has recently presented a memoir to the Academy of Sciences, Paris, on a new species of cryptogame, which occupies the roots of the beard, and forms a species of contagious *mentagra*. The disease generally occupies the chin, lips, or cheeks; the affected parts are covered with greyish and yellow scabs, formed by the epidermic cells, under which is the root of the hair, surrounded completely by a sheath of cryptogamia; the latter are not elevated above the surface of the epidermis. B.]

nion until the disease is more advanced. Syphilitic pustules are distinguished from those of mentagra by the absence of heat, pain, and tension. They are situated on a copper-coloured or violet base, and are developed slowly. They are rarely formed on the chin and upper lip, but commonly appear on the ala of the nose, on the forehead, and at the commissures of the lips. Syphilitic tubercles, which appear only to affect the superficial layers of the cutis vera, differ from the chronic indurations of mentagra, which are conical, and deeply seated in the skin, by their shining and dull coppery colour; besides, there are always some local or constitutional symptoms present, which will readily distinguish them. Syccosis can hardly be confounded with furuncles.

*Prognosis.*—Mentagra never terminates unfavourably; but the physician should always be guarded in giving an opinion as to when the disease will disappear, or else he will often be deceived. The more frequent the eruption, the longer the duration of the complaint.

*Treatment.*—The first indication in the treatment of mentagra is, to remove the causes which excite the disease; as, for instance, when it affects intemperate persons, or those who are exposed to strong heat, the patient should guard against these exciting causes. The razor should not be used for a certain time, as it increases the irritation, and the beard may be cut with a pair of scissors. When the inflammation is severe, the application of leeches behind the ears, or on the submaxillary region; and when the patient is vigorous, general bleeding, together with emollient fomentations, and poultices of potato-flour or crumb of bread, cooling drinks, and attention to diet, are the most useful measures that can be adopted. Laxatives, as the acetate of potass, calomel, sulphates of potass, of soda, and of magnesia, are beneficial when there is no gastro-intestinal irritation present. They should be continued for some time.

“When the disease is of long standing, the tubercles large, and the cellular tissue involved, we must have recourse to friction, with ointments of the ammoniacal protochloruret of mercury, or of the deutoxide or sub-sulphate of mercury. To these may be added, with advantage, the vapour bath, or vapour douche. We have frequently seen cases at the Hospital of St. Louis, in which these remedies had the most happy effects in dispelling the tubercular indurations. If the eruption recommences suddenly, the friction should be suspended for a short period.

“Cauterization, with nitrate of silver, or the strong acids, is not a desirable remedial measure. It should never be employed, unless in cases where the disease has assumed an inveterate chronic character. When all these remedies fail, we have often succeeded with tonics, the preparations of iron especially. M. Biett has administered the muriate of gold, in doses of a quarter of a grain each, rubbed into the tongue, with remarkable success. The mercurial preparations, and particularly Larry's syrup, have sometimes effected a perfect cure.”

Mr. Burgess's translation appears to us the best and cheapest work on the diseases of the skin that has yet been published.

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DR. GRAVES'S *Clinical Medicine*.

WE have just received this important work, too late, we regret, to lay an analysis of it before our readers.

The high reputation the author has so long enjoyed as a teacher of clinical medicine, is sufficient guarantee for the character which the work will, no doubt, be found to possess.

In our next Number we purpose giving our opinions of its merits more in detail, and in the meantime strongly recommend our readers to possess themselves of the work itself.

## SCIENTIFIC INTELLIGENCE.

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### PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

SESSION 1841-1842.

First Meeting, 20th November, 1841.

Dr. GRAVES in the Chair.

1. *Aneurism of Abdominal Aorta*.—Doctor Law detailed a remarkable case of aneurism of the abdominal aorta, and exhibited a drawing and preparations of the parts engaged. The patient was a gentleman, aged about 38, of slight figure, and who generally enjoyed good health. His habits had been active, he was fond of hunting, and had sometimes been thrown from his horse, but without receiving any serious injury. In November last he applied to Dr. Law, complaining of pain in the back, from which he had suffered for a considerable time past, and which he could not ascribe to any particular cause. About six weeks before his application to Dr. L. the pain had suddenly become much more severe, and he recollected distinctly that this aggravation occurred on his hearing some intelligence that distressed him very much. From the medical treatment to which he had been subjected he had experienced but little relief, and that merely temporary. Dr. Law prescribed for him an anti-spasmodic draught, and it had the effect of immediately relieving the pain.—There were, however, some circumstances in the case which induced Dr. Law to desire that the patient should remain in bed on the following day, when he made an examination with the stethoscope. On applying the instrument to the epigastrium a *bruit de soufflet*, very loud and distinct, was heard; it was also audible posteriorly on both sides of the spine. Careful examination, repeated on a second and third day, detected the same symptoms, from which, together with the character of the pain, Dr. Law made his diagnosis that the case was one of aortic aneurism, and of some duration, an opinion in which Dr. Stokes, who was called into consultation, coincided. In compliance with the anxious desire of the patient's family, there was subsequently added to the consultation another practitioner, who doubted whether the diagnosis already made was correct, because he had himself (as he mentioned) met with the same symptoms in a patient

that he was attending some months previously, and whose case proved, by a complete recovery, that it was not one of aneurismal disease, which it was at first pronounced to be. Notwithstanding this difference of opinion, the case continued under Dr. Law's care, and the event confirmed the accuracy of his and Dr. Stokes' prognosis. The general health declined, the appetite failed, the patient gradually became weak, emaciated, and exceedingly nervous. There was strong pulsation in the epigastrium, but no tumour, nor was the action of the heart much increased. The pain in the back was of two different forms—one was a continual sense of weight or uneasiness, which never intermitted, the other was acute, sharp, darting pain, felt on each side of the spine, which was periodical, recurring generally at midnight, and which, for a considerable time, always yielded to the medicine directed—viz., camphor mixture, ether, and Batly's sedative liquor. As the case proceeded towards its termination the emaciation increased, the pains became more severe, and extended into the lower extremities, particularly on the left side. In this manner six months passed away, when Dr. Law was suddenly sent for in the evening; he found the patient in a state of great distress and agitation, with all his symptoms increased; he complained of most agonizing pains, extending from the seventh rib on the left side, down to the margin of the ilium; a heaving motion was perceptible in the side; the abdomen was tympanitic, and the *bruit de soufflet* could no longer be heard; the pulse was weak and faltering, and there was great depression, which continued to increase till death occurred, which took place on the next day but one.

The body was examined twenty-six hours after death. The parietes of the left ventricle were somewhat hypertrophied and softened; in other respects the contents of the thorax appeared healthy. In the abdomen the aorta was observed passing into an aneurismal tumour, near the celiac axis. The tumour did not project much beyond the level of the spine, it extended more to the right side, and was about three inches in diameter. The aorta having been raised from the spine, there was observed in its posterior wall, opposite to the origin of the celiac artery, a circular aperture, with smooth edges and about an inch in diameter, opening into an irregular-shaped cavity corresponding to the bodies of the two last dorsal and two first lumbar vertebræ, whose substance had been absorbed; the intervertebral substance was not eroded; the cavity itself was filled with lamellated fibrinous matter, dark, brown-coloured, and firm in consistence. Behind the peritoneum, on the left side of the spine, was an immense clot of blood, extending from the diaphragm down to Poupart's ligament. The descending colon was firmly adherent posteriorly to this mass. The effused blood had so infiltrated the adjoining parts that it was very difficult to raise the coagulum from its situation: a section was made of the mass, which did not present any lamellated structure; the cellular matter in which it was entangled, could be traced through it in whitish lines, and the fibres of the psoas, from which numerous

nerves were seen to issue, were spread upon its surface; the left kidney was completely imbedded in it. The tumour lying on the spine where the bodies of the vertebrae had been destroyed was the original aortic aneurism, and the infiltration of blood into the neighbouring parts, and the large coagulum, evidently proceeded from a recent hæmorrhage, the occurrence of which was marked by that sudden aggravation of symptoms which had occurred about two days before the death of the patient.

Dr. Law considered this case of great value and interest, from the information which it conveyed as to a disease so obscure, and in which accurate diagnosis is so difficult. He had observed that no symptom was more pathognomonic than the pain, when viewed in connexion with the other symptoms, and it was the peculiar character of this symptom, which led him to diagnose aortic aneurism in the present case. Epigastric pulsation and *bruit de soufflet* might occur in cases where there was no organic disease. During the last session he had met with a case of aneurism of the thoracic aorta, in which, as well as in this, the opening occurred in the posterior wall of the artery, and the pain endured by the patient was also of two kinds; one an aching, boring pain, which was constant, the other an occasional nipping pain, darting sometimes along the ribs, sometimes in other directions. There was also a sense of stuffing, almost amounting to suffocation, caused by the aneurismal tumour encroaching on the organs of respiration. A case of abdominal aneurism had been detailed by Dr. Thomas Beatty [in the Dublin Hospital Reports], which was among the earliest efforts towards the accurate investigation of this formidable affection. (*Museum, Sir Patrick Dun's Hospital.*)

2. *Tubercular Deposit in Bone.*—Doctor Lees exhibited recent specimens of a scrofulous disease of the bones, in which there was infiltration of tubercular matter into the cancelli. The case was that of a child in the South Union Hospital (Dublin), who had been suddenly attacked with swelling of the forearm, accompanied by vomiting, crying, and the usual symptoms of hydrocephalus, which continued for a week, when death took place. A considerable quantity of fluid was found in the ventricles of the brain, and at its base a gelatinous effusion. The lungs were free from tubercles. One tubercle was found in the mediastinum, and a great number in the mesentery. The urine during the illness had been albuminous, but the kidneys presented no appearance of disease. The most remarkable appearances were those connected with the radius and ulna of the left fore-arm.—The elbow joint itself was free, and the synovial membrane healthy, but the periosteum was much thickened. The medullary canal and cancelli near the head of the ulna were very vascular, and the upper end of the canal filled with caseous matter which was also diffused in the cancellated structure.

3. *Stricture of the Descending Colon.*—Mr. Ferrall said he was about to lay before the Society some particulars of a case illus-

trative of the great difficulty, which often occurs in forming an accurate diagnosis of intestinal disease. The case was that of a woman, aged between 50 and 60, who had often felt slight pain at the left side of the abdomen, and whose bowels were usually torpid, but not inconveniently so; at last obstinate constipation set in, and this had already continued five or six days before he saw her. She was then suffering general distress; the countenance was anxious; the course of the colon could be easily traced through the parietes of the abdomen, and during the attacks of tormina, which were frequent, the vermicular motion of the colon was distinctly perceptible. Medicine having failed to effect a passage through the bowels, on the following day, which was the seventh of the illness, Mr. F. directed an injection to be thrown up as high as possible. A long tube was passed as far as the sigmoid flexure of the colon, and the fluid injected. It passed suddenly and with force; immediately the patient sprung from the bed, pale and gasping, the pulse at the wrist could not be felt, and there was every symptom of collapse. Mr. F. had some brandy instantly administered and ordered two grains of opium, which was to be repeated at suitable intervals till reaction should be produced. On the next day he found her greatly relieved. She had taken altogether fifteen grains of opium. There had been no discharge of either *fæces* or *flatus*. The abdomen was much less tumefied than it had been. During the course of that day there was a small evacuation of solid *fæces* per anum. On the succeeding day she appeared sinking rapidly, there was frequent singultus, and she died toward morning.—The diagnosis Mr. F. had made was, that there was obstruction in the intestinal canal, but its exact situation could not be determined. The body was examined after death. There was no appearance of peritonitis. About the middle of its course the descending colon was dilated, and below the dilatation was a sudden contraction of a carcinomatous hardness, reducing the calibre of the canal to about the diameter of a goose quill. The intestine gradually thickened and hardened as it approached the stricture. The several tissues of the intestine could not be traced into the contraction, they were united into one dense structure; the mucous membrane was slightly ulcerated at the stricture. Below the stricture the intestine was much contracted, but otherwise had no appearance of disease. The rectum was apparently healthy. Mr. F. produced a drawing made from the recent parts, and also exhibited to the meeting the preparation of the stricture. He observed that the case was remarkable for the slight inconvenience experienced during its early stages, and also for the effect of the opium in controlling all the symptoms of the disease. The diagnosis was difficult, but was confirmed by the examination after death. The remarkable resemblance of the symptoms produced by sudden distention of the abdomen on using the enema, to those arising from perforation of the intestinal canal, suggested the use of opium, and the effects of this treatment, although it could not remove the disease, constitute an important fact in therapeutics.

4. *Disease of the Kidney, Ureter, and Bladder, consequent upon Stricture of the Urethra.*—Mr. Bannon produced a specimen of diseased kidney, ureter, and bladder, taken from the body of a man who had for many years laboured under organic stricture of the urethra. Mr. Bannon had only seen him a short time before his death; he found the bladder distended, and the urine coming away by drops; the man refused to submit to the introduction of the catheter. When the body was examined after death, the bladder was found distended to a great size; its muscular coat hypertrophied; the fibres presenting an appearance like that of the carnesæ voluminæ of the heart. The bladder, ureter, and kidney contained a large quantity of puriform fluid; the ureter was tortuous, and its coats much thicker than natural; the pelvis and calyces of the kidney were greatly dilated, and the organ itself reduced almost to a membranous sac.

5. *Bright's Kidney.*—*Urine apparently normal.*—Dr. Graves laid before the Society two kidneys from a man named Connell, æt. 50, of intoxicated habits, who had died of consumption and dropsy in the Meath Hospital. Of these the right was of the natural size, and on being cut into appeared pale and granular. The other was one of the best specimens he had ever seen of what is designated *Bright's kidney*. It was hard and very small; the capsule came off readily, and the surface of the kidney then appeared rough and nodulated, indicating the latter and more confirmed stages of the disease. There had been five examinations made of the urine while he was in the hospital. It was ascertained to be healthy, and had no trace of albumen. This coincided with observations made by Dr. Graves in some other cases. Dr. G. objected to the doctrines of Rayer, as inconsistent with pathology. Rayer had asserted that there is an *albuminous nephritis*, which is only distinguishable by symptoms from common nephritis. But this was inconsistent with cases Dr. G. had observed. Symptoms of disease might be explained, by reference to structural changes, but these changes were not to be explained by reference to symptoms.

6. *Caries of the Petrous Portion of the Temporal Bone, Abscess in the Brain, and Discharge from the Ear.*—Dr. Corrigan produced the recent parts, and mentioned that he had met with two cases, in each of which there had been discharge from the ear, with extensive destruction of the petrous process of the temporal bone, together with disease of the brain. It had been a question, whether the disease of the brain, or that of the bone, was the earlier. In his cases they appeared both to proceed *pari passu*. The specimens he had to produce belonged to a case that had come under his notice in the Hardwick Fever Hospital. Mary Nowlan, æt. 29, when seen by Dr. C., was semicomatose, but capable of replying to the questions she was asked; the pulse was slow and compressible; there had been frequent retching but no general fever; from the right ear was discharged a copious, purulent, very foetid matter; there had been violent pain in the head, which was relieved slightly by the discharge from the ear. The dis-

ease was attributed to having washed the head with cold water. She died in five days after her admission into the hospital. The head was opened; the brain appeared dry superiorly, and the veins enormously distended with dark-coloured blood; at the base of the brain, on the right side, was an abscess, in the substance of the brain itself, not encysted, and filled with a green foetid pus. Sero-purulent matter was effused at the base of the brain. The petrous portion of the temporal bone was carious to a considerable extent; the dura matter covering it was discoloured, and there was purulent matter beneath it.

7. *Pneumonia supervening on Scarlatina.*—*Tubercular Depositions in the Lung, &c.*—Dr. Corrigan detailed the case of a child, æt. ten years, who was recovering from scarlatina, and had been removed into the convalescent ward of the Hardwicke Fever Hospital, when pneumonia supervened. There was sudden and acute pain of the right side, hurried and difficult respiration, great sinking and prostration of strength; face congested. There was dulness with crepitation at the upper part of the right lung, and inferiorly a clear sound on percussion and distinct respiratory murmur. The pneumonia extended itself gradually to the entire of the right lung. She recovered from this attack, but acute anasarca and diarrhoea supervened, and proved fatal in a few days. On examination, the right lung, except its upper portion, was found to be completely carnified. The carnified portion sunk in water; there was no effusion.

8. *Aneurism of the Ascending Aorta.*—Dr. J. Duncan said he had to communicate to the Society, a case of aneurism of the ascending aorta, which was remarkable for its size and mode of termination. It had occurred in a stout quarryman, æt. about thirty, who was addicted to the use of intoxicating liquors; but he had been healthy until sixteen months ago. It might have originated in some violent exertion incidental to his occupation. The aneurism was of enormous size, and produced absorption of the upper part of the sternum; there had been neither dysphagia nor change of voice, and but little suffering. There was a double bruit de soufflet, and violent pulsation. Death was produced by suffocation, there being no effusion of blood, nor had the sac burst internally.

*Second Meeting, November 27th, 1841.*

Doctor MONTGOMERY in the Chair.

1. *Osteo-sarcoma of the first Phalanx of the middle Finger.*—Mr. Ferrall said he wished to draw the attention of the Society to a case of osteo-sarcoma, which had occurred in a woman, sixty years of age, who had been admitted into St. Vincent's Hospital, with a large tumour growing from the second and third phalanges of the middle finger of the left hand. The drawing showed the first phalanx passing into the tumour; the second and third were completely lost in it, except the tip of the third with the nail attached to it, which appeared still projecting beyond the morbid growth. The tumour was covered by integument; it was of an irregular rounded figure, with several

protuberances. The artist who made the drawing compared the section to an unsound potato, and the same comparison had been applied to similar tumours by Boyer. Externally the tumour was in some parts soft, in others firm and elastic. Its growth had commenced in childhood, but for a number of years, it had caused little inconvenience. It had gradually enlarged, and had become painful during the last five years. At first the pain was slight and occasional, but it had increased in severity up to the patient's admission into hospital. It was felt in every part of the tumour and completely destroyed rest. The strength had failed, and the body was emaciated. Amputation was determined on, and performed at the junction of the phalanx with the metacarpal bone. Mr. Ferrall exhibited the section, and observed that the first phalanx was perfect, but the second was altogether lost in the tumour. The joint between the first and second phalanges was also preserved, notwithstanding the destruction of the second phalanx itself, the cartilage at the head of the latter having remained. The section exhibited several distinct cavities, filled with a gelatinous fluid; cartilaginous matter and bony spicula could be felt in some parts of it. Mr. Ferrall then alluded to the opinions of Boyer and Sir Philip Crampton, and others, on diseases of this nature. Sir Philip would call it *benign osteo-sarcoma*, and he would agree with him that it should not be confounded with the strumous disease of the bones in children, as might be the case if the name *spina ventosa* were applied to it. A spirited description of this form of *abnormal growth*, would be found in the Cyclopædia of Anatomy; but the author, in terming it *spina ventosa*, had admitted an inaccurate notion of its pathology. The *spina ventosa* (itself an objectionable term) should be reserved for the strumous enlargements of bones. The latter have a tendency to cure themselves, by elimination of their contents, leaving merely an atrophied finger. The osteo-sarcoma has no such tendency, but although progressively increasing in size, does not, like malignant osteo-sarcoma, contaminate other parts. Benign osteo-sarcoma, then, is the more suitable term for this disease.

2. *Paralysis of the Muscles of the Face.*—*Caries of petrous Portion of temporal Bone.*—*Spasmodic Contractions of the Muscles of the Face.*—Doctor Graves said he had to lay before the Society some particulars, respecting a rare disease of the nervous system, adduced from two cases that had come under his notice in the Meath Hospital. In one case there was a spasmodic contraction of the several sets of muscles, supplied by the portio dura; in the other, there was the opposite effect, paralysis of the same parts. Of both these he exhibited drawings.

The paralysis occurred in a boy of ten years of age, and of a scrofulous habit, who had been admitted into the Meath Hospital labouring under dropsy and diarrhœa. He was several days in hospital, and these complaints had been greatly relieved, when it was observed that there was paralysis of the right side of the face, but obvious only

when the muscles of the face were in action. Thus the attempt to close the eye failed on the affected side. There was a discharge from the ear of the same side which originated seven years previously. The opinion formed of the case was, that there was disease of the petrous portion of the temporal bone, and that with this was connected the affection of the portio dura of the seventh pair, from which the paralysis might be considered to result. There was pain in the head at the right side, which after some time changed its place and moved to the back of the head, and from this time the discharge from the ear ceased. The pain then moved down the spine. A few days before death there were tetanic convulsions, and an extreme sensibility of the entire surface of the body. Three years before there had been similar convulsions. The power of locomotion and the intellect continued to the last unimpaired. During the few days which intervened between the first appearance of the convulsions, and his death, they had recurred five or six times. The body was examined after death. The portio dura on the face exhibited no morbid appearance. Within the skull a perforation was observed in the dura mater, immediately opposite to the aqueduct of the vestibule in the petrous portion of the temporal bone, which was carious. A green foetid pus detached the dura mater from the bone in this situation, and also bathed the nerves at the base of the brain. The membrana tympani and internal ear had been destroyed. The brain itself appeared healthy. The theca of the medulla spinalis was filled with pus, but the medulla itself (of which Dr. Graves exhibited a drawing) appeared healthy, and the attachments of the ligamentum dentatum were all perfect.

The other case was that of a woman, forty years of age, who was admitted into the Meath Hospital in June, 1841, affected with spasmodic contractions, which occurred several times in a minute, of all the muscles supplied by the portio dura on the right side of the face. The angle of the mouth and ala nasi of the affected side were drawn towards the ear during the spasms, and the fibres of the platysma, participating in the contractions, appeared strongly marked upon the neck. She described the complaint to have commenced four years and a half before, in the lower eyelid, with spasmodic twitchings, which after some time extended to other parts of the same side of the face. Pain in the head had not preceded the attack. The contractions occurred even during sleep. There was no diminution either of sensation or temperature of the affected parts. There was a sensation of noise in the right ear, but without pain, and the hearing continued unimpaired. Could the noise in the ear in this case be accounted for? Was it the muscular *bruit* caused by spasmodic twitching of the minute muscles of the internal ear?

3. *Scarlatina.*—*Purulent Depositions in the sterno-clavicular and Knee Joints.*—*Depositions of Pus in the subcutaneous cellular Membrane.*—Dr. Corrigan produced the recent parts in this case. The subject was a child four years of age, who had been admitted into the Hardwicke Fever Hospital on the 10th of November,

which was the third day of her illness in scarlatina. The eruption was confined to the extremities, and was not high; the tonsils were swollen, but not ulcerated, and deglutition was very difficult; on the left side of the neck was an enlarged gland, which was tender and painful on pressure; it continued in apparently the same state for some days: on the morning of the 15th it appeared greatly enlarged, but no fluctuation could be perceived. The child was restless, and her skin burning hot; the fever continued to increase. On the 18th there were rigors; a patch of redness was observed on the back of her hand on the following morning; there was also a deep red blotch on the inside of the thigh and calf of the leg of one side, and on the great toe of the opposite side; no fluctuation could be felt in any of those situations; the fever had become typhoid, and the patient died on the following day. When the body was examined, the spot had disappeared from the back of the hand; underneath the skin there was a trace of purulent deposition. The dark red spots on the leg and toe still continued; they presented the same intensity of congestion through the whole depth of the subcutaneous cellular structure, and the cuticle (which Dr. C. exhibited) was permanently stained, but there was no trace whatever of purulent deposition. There was in the neck a considerable quantity of purulent matter among the cellular tissue and glands. The lungs and liver were perfectly free from any purulent deposition; but the knee joints and the sterno-clavicular articulations were both filled with pus. The other joints were not examined.

Dr. Corrigan proceeded to make some observations on the different theories that have been advanced, in explanation of insulated purulent depositions. Arnott maintained, that the pus is carried to distant parts from its original dépôt; Cruveilhier, that the particles of pus carried through the blood, themselves become in distant parts distinct centres of irritation, round which congestion and purulent inflammation may occur. The present case would hardly bear out either of these opinions, and Dr. Corrigan thought it much more probable, that these depositions in distant parts were wholly independent of each other, or only connected by sympathy of action in similitisues. He considered, that when a purulent secretion had taken place in any part of the system, the same lesion of secretion might, in an unhealthy state, occur in many and distant parts; and that he looked on the dark red patches already described, as the preparatory local congestions, which, if the child had lived long enough, would all have terminated in purulent depositions.

4. *Bright's Disease of the Kidney.—Dropsy.*—Dr. Corrigan said, that the specimens which he had now to lay before the Society, were taken from the body of a man of broken down constitution, who had laboured under dropsy, connected with that state of the kidney which is denominated Bright's Disease. The surface of the kidney was yet smooth, its substance was yellow, and had no tendency to contract; it was analogous to the pale yellow liver, and it was evi-

dent, that this was not the first state of the contracted kidney. The liver appeared to be undergoing a similar change of structure, and externally there was a deposit of lymph upon it.

In this case the urine had been slightly albuminous. It had been observed, that the quantity of albumen is greatest in the early stages, and diminishes as the disease proceeds. The very low specific gravity of the urine ranging from 1001 to 1005, indicating the presence of but one-twelfth of its usual solid ingredients, showed that the disease was of the worst and most fatal form. Dr. Corrigan adverted to the opinions of Dr. Christison on this disease, and observed, that the presence of albumen in the urine was not in itself a proof of organic lesion. Indeed, it had been remarked by Dr. Prout, that the re-appearance of albumen in the urine was itself a favourable symptom.

5. *Cirrhosis of the Liver.*—*Ascites.*—Dr. Greene produced a fine specimen of cirrhosis of the liver, from the body of a woman who had died labouring under dropsy, and who had also had hæmatemesis. This condition of the liver was always found connected either with ascites or diarrhœa. In the present case it was found in connexion with ascites. Dr. Greene exhibited the peculiar state of the liver, and observed, that two different opinions had been formed as to the nature of the disease itself. Laennec asserted, that an adventitious tissue was formed in the organ, while Cruveilhier taught that the appearances were owing to an exaggeration of the natural structure by which the acini became conspicuous. In the present specimen there was a remarkable shrinking of the organ, as Laennec had observed, and which he considered to be effected by an accidental tissue. The peritoneal covering was greatly thickened. The specific gravity of the whole organ was greatly increased. On cutting into the substance of the organ, it appeared filled with granules, attached by peduncles to the cellular structure. The urine in this case was not coagulable either by heat or by acids.

6. *Malignant Tumour.*—Mr. Lynch exhibited a specimen of malignant disease, which he had removed from a man aged 38, who had been admitted into the Jervis-street Hospital on the 19th instant. The tumour was attached to the inside of the right thigh, and had a smaller one projecting from it. It had been slowly increasing for seven or eight years, and during the greater part of that time had given little inconvenience. Lately it had, after a blow received in riding on horseback, become inflamed, and severe darting pains were felt through it. Early in November it burst, and discharged an ichorous fetid fluid. There was one gland in the groin swelled. The tumour itself felt very elastic, and on being cut into after its removal, was found to present the characters of encephaloid disease.

*Third Meeting, December 4, 1841.*

SIR PHILIP CRAMPTON in the Chair.

1. *Pneumonia of the left Lung.*—*Emphysema of the superior Lobe.*—*White Solidification of the inferior Lobe.*—Mr. Ferrall laid

before the Society the recent specimens, and detailed the history of this case which had come under his notice in St. Vincent's Hospital. The subject was a female, who was admitted into hospital about two months previously, and who at that time had been a month ill. She was suffering great difficulty of breathing; there were bronchial respiration and bronchophony in both lungs, with dulness on percussion, except at the upper portion of the left. Calomel and opium were used with great relief, but the strength failed. The decoction of *senega* and ammonia was used with benefit for some time, when the pneumonic symptoms recurred with great difficulty of breathing and orthopnea, under which she gradually sunk. This woman had been greatly exposed to cold in a passage from Liverpool to Dublin, and as the examination of the body proved, there were two diseases of the lung, one of which was of an earlier date than the other. The right lung was firmly adherent to the thoracic parietes; it was dense, contracted in size, and carnified from an old pleuritis; that side of the thorax had also contracted, in correspondence with the diminished bulk of the lung. The superior lobe of the left lung was emphysematous, and was the only portion of the lungs that remained capable of respiration. The inferior lobe of the left lung was in a state of hepatization; it was white and solid, not containing any pus, but there had probably been a deposit of lymph in it. Mr. F. demonstrated these different morbid changes, and offered a conjecture, that if the patient had lived longer, this hepatized portion might have passed into the state which Dr. Corrigan has denominated cirrhosis of the lung. The heart was pale, and there was no valvular disease. The state in which the inferior lobe of the left lung was found, he thought would be most appropriately described by the name *white hepatization*. Indeed, Andral himself has objected to the name *grey hepatization*. This condition was induced by the deposition of lymph in the parenchyma of the lung, and was not of very uncommon occurrence. He had met with a case where it existed in the superior lobe, while the inferior was in the state of *red hepatization*.

2. *Hydropericardium and Inflammation of the Valves of the Pulmonary Artery*.—Dr. Graves exhibited the recent parts in this case, which was that of a man 60 years of age, who had been admitted into the Meath Hospital, labouring under pneumonia of the right lung. Part of the lung was in a state of solidification. During three weeks that this patient was in the hospital, the disease continued nearly stationary, treatment had little effect upon it. There was then a sudden change for the worse, and death occurred in about twenty-six hours afterwards. The body was examined after death, and it was discovered, that in addition to the pulmonary disease, there was also hydropericardium and inflammation of the valves of the pulmonary artery, lesions which were not suspected during life. Both had evidently arisen within thirty hours before death, contemporaneously with the sudden exacerbation. The disease of the pericardium was extraordinary, considering there was no effusion into any other part. Dr. Graves exhibited the heart, and pointed out the

valves coated with recent lymph, the result of acute inflammation. There was another remarkable circumstance; the pulmonary artery had but *two* valves. The usual abnormal variation is an increase in the number. In other respects, the heart appeared healthy.

3. *Effusion of Blood within the Brain.*—Mr. Hamilton said, the specimens which he had to submit to the Society, were taken from Mary King, æt. 76, who up to last month had been generally healthy. On the 20th of November she had suddenly become insensible, and was paralyzed on the left side. When Mr. H. saw her on the following day, she was lying on her back; there was paralysis of motion of the left side; she could still protrude the tongue; there was strabismus of the right eye; the pulse was eighty, full and strong. On the next day to that she was comatose; but on the three subsequent days rallied and recovered her senses. On the eighth day of the illness she was able to call for drink, but afterwards got worse, became comatose, and died. When the body was examined, on the right hemisphere was found a large clot. Abercrombie had described three varieties of apoplexy, to one of which this corresponded. It was analogous to extravasation from injuries. In this case, the coma before death, and the fatal event itself, had been the result of a fresh extravasation, which had occurred when the patient was recovering from the effects of the first effusion. In old persons this effusion arises from a disease of the arteries, and the consequences are softening of the brain and great extravasation of blood. Mr. Hamilton pointed out the appearances presented by the apoplectic clot, and the brain in apposition with it, and conceived that in some parts there was a thinning of the coats of the arteries, rendering them very liable to give way at those points.

4. *Arachnitis.—Tubercular Cavities in the Lung.*—Dr. Graves detailed the case of a young man, one of the constabulary stationed in Lucan. He had been brought to the hospital when his illness had already lasted ten days. He was in a state of collapse; for several days there was headach; he raved occasionally, and was incoherent in his speech. There was no heat of the scalp, nor extraordinary pulsation of the temporal or carotid arteries. There was extreme watchfulness. This patient died after he had been sixteen days in hospital. There was found within the skull, extensive inflammation of the arachnoid, particularly at the base of the brain and commencement of the medulla oblongata, which were coated with lymph, and bathed in a puriform serum. But what Dr. G. wished particularly to direct the attention of the meeting to, was the state of the lungs. There had been neither cough nor expectoration, and the pulse and respiration were both natural, yet on examination the lungs were found studded with tubercles, which, in some portions were so numerous as to solidify the lung. In the upper part of the lung there were tubercular cavities, some of which were filled with fluid, and here and there sinuous ulcerations extended into the pulmonary substance. The case also showed, that inflammation of the brain might

exist without the occurrence of convulsions or paralysis, and that it might be latent for several days.

5. *Pendulous Tumour (simple Sarcoma of Abernethy.)—Encysted atheromatous Tumour.—Common fatty Tumour.*—Sir Philip Crampton said he had to lay before the Society several specimens of tumours, which he had met with during the preceding week. The first specimen was a pendulous tumour, the simple sarcoma of Abernethy. It had been attached to the fold, between the nates and the thigh; its surface was rough, and the skin covering it corrugated. Tumours of this kind were formed in the manner first described by Hunter, which is detailed by Sir Everard Home, in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," vol. i. p. 230, sq. In a similar manner are formed pendulous warts on parts subject to much friction; this causes increased determination of blood, and then hypertrophy. Sir Philip here exhibited drawings of two patients in the Meath Hospital, to each of whom one of these tumours of enormous size was attached: he had operated in one case. Tumours of this kind frequently grow from the pudenda in females. Some of the smallest size form on the lower eyelid, proceeding from the tarsal ridge, or the loose skin in that situation. The tumours of this kind are not supplied by a single artery, but by several small branches. The next tumour was taken from the scalp of the same subject, but was of a different nature. It was atheromatous and encysted. To this description of tumour the theory of Hunter, already alluded to, does not apply. The cyst is a secreting membrane. The tumour appears to have little or no vital connexion with the body, and is easily removed without hæmorrhage. The last specimen was one of the common fatty tumour, a variety which is rarely found on the extremities. This had occurred in a lady, between fifty and sixty years of age. It was situated at the root of the neck, and was so close to the subclavian artery, that the pulsation could be felt through it which led one surgeon who had seen the case to consider it to be aneurism, while another pronounced it to be malignant tumour. The diagnosis of these tumours would be assisted by recollecting that they are always superficial, that they are encysted and lobulated. When pressed down with the hand, the lobes are separated, and a well-defined scalloped edge is felt. The operation for their removal is to cut into the tumour, insert a hook, and then withdraw the tumour, which is very easily done unless there has been previous inflammation.

8. *Atrophic Cancer of the Breast.—Cancerous Infiltration of the Diploe of the Bones of the Cranium, and of the Femur.—Cancerous Tubercles in Liver.*—Mr. Smith said he had to exhibit to the Society several specimens of cancerous disease. They were taken from the body of a woman who had been admitted into Jervis-street Hospital, two years ago, suffering under cancer of the left breast. The gland was hard, and the ulcer itself, which was near the nipple, and of small dimensions, was very indolent. The skin covering the breast was rough and nodulated: as operation was not considered advisable, she was discharged. The same patient

was lately admitted into the North Union Poorhouse, greatly altered in appearance. She was emaciated, and evidently suffering under cancerous hectic. The left breast had diminished in size; it was not painful, and was of a stony hardness. The right was scirrhus. There were severe pains of the limbs, hip, and back. The right thigh broke while she was turning in bed; the hectic proceeded; epileptic fits supervened, and then death ensued. When the body was examined, both the breasts were found to be scirrhus. The left was more dense and firm than usual, and no fluid or cancerous juice (as it has been called) could be expressed from it. The right was enlarged, and contained fluid. Cancerous tubercles existed in the liver. In the osseous system cancerous matter was found in the femur and skull, the inner table of which always suffers the most from cancerous deposition in the diploe. Having demonstrated the several lesions, Mr. Smith observed, that there are two forms of the cancer of bones, one consisting of circumscribed tubercles, the other of infiltration, which may be into the compact structure as well as into the medullary tissue. Cruveilhier had remarked, that the atrophic cancer of the breast was almost confined to the aged, to persons between fifty and eighty. This remark Mr. Smith could confirm from his own observations. In this description of cancer it was, that the internal organs and the bones were most usually affected. The cancerous matter was probably deposited in the veins, and venous capillaries, of which there was an instance in a case of uterine cancer delineated by Cruveilhier. In uterine cancer the bones had not been found affected. These cancerous affections had been represented in the plates of Cruveilhier, whose accurate observation nothing could escape. When a bone is infiltrated with cancerous matter, large perforations are not made in it. The compact structure is merely thinned by absorption, and then the bone may break from a very slight cause. (*Museum, Richmond Hospital.*)

*Fourth Meeting, December 11, 1841.*

Dr. O'BEIRNE in the Chair.

1. *Obscure Abdominal Tumour.—Malposition and Disease of the Kidney.*—Mr. Ferrall said that he had on more than one occasion directed the attention of the Society to specimens illustrative of the great difficulty that often occurs in forming an accurate diagnosis of abdominal tumours. The case he had now to communicate was another instance of the same difficulty. The subject, a female, aged 30, was admitted into St. Vincent's Hospital, affected with tubercle in the lungs, and diarrhoea; she also suffered from almost continual incontinence of urine, with pain in the vesical region; the urine itself was purulent and alkaline. A tumour, the size of a melon, and which was tender to the touch, appeared on the right side of the abdomen; between the last rib and the spine of the ileum (the situation and external appearance of which were represented in the drawing he then produced). The position of this tumour was deceptive—it was too high for an ilio-cæcal abscess; too low for an hepatic dis-

case ; and above it was an interval below the ribs, which was sonorous on percussion. The patient sunk under a complication of diseases. The body having been examined, the abdominal tumour was found to be produced by the right kidney, to which the cœcum was adherent anteriorly and inferiorly ; the capsule of the kidney was thickened, and the organ itself, which was enlarged, was full of abscesses ; but little of the cortical substance remained. The remaining bulk of the tumour, felt during life, was formed by enlarged glands, some of which, on being laid open, presented a tubercular—others a lardaceous character. Mr. Ferrall, having pointed out these appearances in the recent specimens, observed that the purulent urine might have been supposed capable of aiding the diagnosis ; but, it would be recollected, that in some of the cases which he had on previous occasions laid before the Society, there was the same symptom without disease of the kidney ; as, for instance, where the symptoms depended on fungoid and other diseases of the bladder. Of this displacement of the kidney, Dr. Bright had given some examples. Where it occurs, and the organ, becoming diseased, loses its normal shape and proportions, the diagnosis must be obscure. We cannot, therefore, have too many cases on record for our guidance.

2. *Malignant Tumour in the Epigastrium.—Malignant Disease of the Testis.*—Dr. Croker presented the diseased parts in this case. The subject was a man, æt. 53. In July last he perceived a slight tumefaction of the right testis, and began to experience a sense of weight and dragging when he was walking ; he became emaciated. In August, a tumour was perceived in the epigastrium, which gradually increased in size ; pressure on it produced sickness and vomiting ; however, he continued at his usual work up to ten days before his death, which occurred during the past week. For seven days before his death, he had obstinate constipation, and frequent vomitings. His pulse, when Dr. Croker saw him, was 120 ; the surface cold ; and there was complete prostration of strength, with thirst and sickness of stomach. After death, when the body was examined, the tumour in the epigastrium was found to be encysted ; it lay anterior to the pancreas ; when cut into, it was found to be full of cells, with cartilaginous septa, which Dr. Croker then pointed out to the Society. Both it and the testis presented the usual characters of encephaloid disease. (*Museum, Park-street School.*)

3. *Cancer of the Rectum—Cancer of the Uterus, in its incipient and, as yet, curable Stage.*—Dr. Montgomery said, that by the kindness of Dr. Greene he was enabled to lay before the Society a most interesting specimen of disease, and which was peculiarly adapted to illustrate a subject that for a long time had engaged his attention. The patient in this case was a woman, æt. 45, who died of a carcinomatous affection of the rectum. The disease commenced eighteen months ago. The first symptoms observed were constipation, succeeded by great irritability of stomach, and afterwards severe and lancinating pains in the sacral and lumbar regions, extending to

the hip joints, and down the thighs. The pains were exacerbated, when the bowels were moved; the constipation ceased, and then came on an uncontrollable purging, with foetid and bloody dejections, which lasted for some time, and then alternated with constipation. On the 2nd of December she was admitted into the Whitworth Hospital, and was then suffering unceasing pain in the back; it extended down the left thigh, which was cedematous; the hypogastric veins were enlarged; the abdominal muscles rigid; the countenance sallow, and sunken; the body in a state of emaciation. There was severe pain in the pyloric region, and the stomach rejected both food and medicines. In the examination, after death, no disease could be detected in the stomach; the rectum was extensively diseased; but what he wished to direct the attention of the Meeting to, was the condition of the uterus, which was covered with false membrane, and agglutinated to the intestines. The patient had died of the carcinoma of the rectum, and the same disease was commencing in the uterus, but as yet the substance of the uterus was unaffected, except at the cervix, and there it exhibited, in a very well marked manner, the symptoms of a period of cancer uteri, which it was very important to recognize, not only as a pathological fact, but as one connected with therapeutics, and which he had been the first to describe. The propositions he wished to inculcate were these:

I. That there is a stage of cancer of the uterus, in which the disease is confined to the muciferous glands of the cervix uteri—a stage earlier than that which authors have described as the first stage.

II. That this can be recognized by examination during life.

III. That the disease is then curable, but, if neglected, will pass on into the incurable stage.

The symptoms of this earliest stage of cancer of the uterus are nearly those of the subsequent (the *first* of authors), or even of the ulcerative; for instance, pain; but on examination, the disease will be found affecting only the os uteri and the cervix; those will be swelled and turgid, and projecting granules will be felt under the mucous membrane; the os uteri and cervix will be of a deep crimson colour, and the characteristic points or granules often of a dark blue, and prominent; there will be no consolidation of the organ with surrounding parts, and its functions, as the catamenia, continue unimpaired. It might be objected, that such a state would not be carcinomatous, but the present case sufficiently proved it to be real cancer. The patient had died of cancer in one organ, and it was extending to another, where it exhibited all the characters he had described, of the period in which cancer of the uterus is as yet curable, and can be recognized. In the specimen, the Society would observe the fulness and firmness of the os and cervix uteri, and the granules which felt like shot or gravel under the mucous membrane. Dr. Montgomery said he dwelt on the importance of this matter, because he had several instances of cures effected when the cancer was detected in this early period. One of these had now remained seven years free from the disease; another

five years; a third, two years and a half, &c. Of the curative means, that was not the place to speak; but what his experience enabled him to communicate, he intended to lay before the public.

4. *Diphtheritis in the Colon, not preceded by Dysentery*.—Mr. Macdonnell produced the recent parts. The subject, a man, æt. 24, was a patient of Dr. Graves, in the Meath Hospital; he complained of pain in the abdomen; when the pain ceased, nausea occurred; the abdomen was flaccid, and not tender to the touch; the bowels were constipated, but a week before his death diarrhoea appeared. While in the hospital, he vomited a large quantity of dark-coloured, pitchy matter; his tongue was clean and moist; and his pulse never accelerated. In the examination, after death, the mucous membrane of the colon was found extensively diseased; it was thickened, almost cartilaginous, and was coated through its whole extent with lymph. It had been the seat of extensive inflammation, of which there had been no symptom during life. Dr. Abercrombie had enumerated such lesions among the effects of dysentery, but in this case no dysentery had occurred.

5. *Contraction of the Palmar Fascia*.—Mr. Mayne produced the recent specimen in this case. The deformity consisted in a firm, permanent flexure of the little finger on the palm. From the palm a firm cord could be distinctly felt, proceeding up to the anterior part of the carpal annular ligament; the integuments were found to be firmly united to the aponeurosis at the wrinkle; the palmar fascia was natural, except that its fourth fasciculus was very strong, and contracted; the flexor tendons were also natural. The deformity appeared to depend on the contracted state of the fasciculus, of the palmar aponeurosis, and a similar contraction of the sheaths of the tendons in front of the finger. It should be observed, that there was in the specimen a branch of the palmar artery running very near and parallel to the band, which might have been divided, if operation had been resorted to. (*Museum, Richmond School.*)

6. *Dilatation of the Air-cells*.—*Bronchitis*.—*Pneumonia*.—Dr. Corrigan produced the recent specimens. The dilatation of the air-cells was a lesion of very rare occurrence, and had been first described by Dr. Stokes, in a communication to the Society.\* The present case was that of a man æt. 25, who appeared in good health up to four days before his death. He had suddenly become cold and collapsed, and was affected with a sense of suffocation, the pulse was weak, and there was no pain referred to any particular situation. From this state he rallied a little, but the oppression and sense of suffocation continued. There was expectoration similar to that of pneumonia, and a crepitating râle was audible in the posterior part of both lungs. He gradually sunk, and died on the fourth day of the attack. The pleura was found to be healthy, but the lungs did not collapse, and their surface was everywhere studded with sub-pleural

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\* *Vide Dublin Journ. of Med. and Chem. Science*, vol. xv. p. 194.

vesicles, particularly about portions which were in a congested state; along the edge of the lungs they formed a line like beads; no part of the lung was hepatized, but there were some lobules in its posterior part emphysematous, and the section presented a marbled appearance. The bronchi and tubes were filled with matter of the same kind as had been expectorated. There was no crepitus in the lung on pressure being applied; the air was confined in the vesicles, and there was an appearance of arterial injection in the interstices between the lobules, where they were free from pressure. With the view of determining whether the emphysema was ancient, Dr. C. had dried a portion of the lung (which he then exhibited), and found that the vesicles were not enlarged, and that there was even an attempt at interlobular emphysema. The pneumonia in this case was not sufficient to account for the rapid sinking and other constitutional symptoms. Perhaps the principal disease was confined to the bronchial arteries and smaller air cells, and the suffocation and rapidly fatal course of the illness might be ascribed to the blood being obstructed in its progress to the air cells. The case was interesting as connecting extreme bronchitis with pneumonia. In the case described by Dr. Stokes, the physical signs were those of universal, equable, and extreme dilatation of the cells in both lungs without rupture, and there were not, as in this, any sub-pleural vesicles.

7. *Disease of Genito-Urinary System and Rectum.*—*Bright's Kidney.*—Dr. Hutton produced the recent parts. The subject was a female, who, on two occasions, had been admitted into the Richmond Hospital, suffering from acute matritis. One of these attacks was six years ago, the other in three years and-a-half afterwards. She was on each of these occasions treated with success, and discharged much relieved. About five weeks ago she again presented herself at the Hospital. She appeared in a state of complete exhaustion, worn out with pain and suffering. She had dysentery and incontinence of urine. In a few days after her admission she died. When the body was examined the uterus and all the neighbouring parts were found to be agglutinated together. The kidneys were in that state called Bright's disease. The ureters were dilated, and adhered to the uterus. The bladder was inflamed, and the urethra ulcerated. On the upper part of the uterus were two or three membranous cysts, and several smaller ones in the tissue of the uterus itself. The contents of these cysts were soft or liquid, of an ochreous colour, and extremely foetid smell. The rectum was adherent to the uterus, and its mucous coat was ulcerated in several places; a fistulous opening led from a contracted part of the rectum towards the uterus.

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*Rupture of the Tendon of the Triceps Femoralis.*—M. Demarquay, intern of the Hotel Dieu, gives in the *Gazette Medicale* for September last a detailed account of this very rare accident, with thirteen cases, collected from various authors. Of these we shall extract the first case, which is also the first ever described, by Ruysch, in 1720, as it gives as clear and satisfactory a description of the accident in a few words as the more detailed cases of others. He says, "If the reader should find the fact which I am about to relate difficult of credence, I may inform him that I have not seen it myself without admiration, and that I should hardly look on it as credible if I were unable to prove it. One day I was called to see two men, who were in the habit of fastening their gaiters above the knee, and so tightly, that the motion of these parts was obstructed. They happened to fall on their knees, the legs flexed on the thighs, without fracture of the patella or of its tendon; but in revenge, the tendon of the muscles which extend the leg on the thigh, in consequence of the sudden flexion, broke. This fact will appear extremely difficult to be believed by those who know the strength and size of this part. Having examined the string with care, I perceived that the space between the inferior fragment and the superior would admit the finger of an adult. These men could neither rise nor walk, nor even balance themselves on their feet. Carried home, they kept their beds for several months; nevertheless, they remained lame, and could only walk, leaning on a stick."

The symptoms of this accident, according to M. Demarquay, are, "A smart pain perceived at the lower part of the thigh, a sensation of something having snapped in this situation, and, finally, falling down. If the surgeon is called at the moment of the accident, he detects a subcutaneous depression, situated above the patella, sometimes immediately above this bone, and sometimes, on the contrary, at three or four fingers' breadth, higher up. This depression is not always the same: sometimes it hardly admits the finger; at others, on the contrary, it has a large extent: its depth also equally varies. This symptom becomes more manifest, according as one bends or extends the leg. Pressure on the depression gives pain. The patella is more moveable than ordinary; it is a little lowered; and in one case it had been drawn on the head of the fibula. The patient can neither raise nor extend the limb. Besides these symptoms there is sometimes a swelling, sometimes a large ecchymosis, and sometimes even inflammation supervenes at the spot." The treatment he recommends is the application of a starch bandage from the toes to above the knee, and a long straight splint behind the limb, which should be raised so as to keep it in the most perfect extension.

*Spontaneous Perforation of the Stomach.*—There is a paper on this affection in the *Archives Generales* for September by M. Amedie Lefevre, Medicin, Professeur de la Marine. He details seven cases; some of which came under his own observation, and some which

occurred in the practice of others, or were selected from authors. We do not quite agree with M. Lefèvre, that all these cases were of purely sudden formation, but believe that the perforation was rather the termination of previous slow ulceration, but that many were sudden perforations of the stomach appears very probable, and M. Lefèvre's opinions are worthy of every attention. It may be premised, that he succeeded, by inflating excessively the dead stomach, in inducing rupture, and that the openings thus made were of various shapes, some *perfectly circular*.

CASE, reported by M. Prosper Rijou. — Appearance of health perfect up to the occurrence of the symptoms; ingestion of beans; a few hours after, development of atrocious pains in the region of the stomach, no vomiting, later symptoms of peritonitis and of effusion: death forty-eight hours after; tear of the lesser curvature of the stomach near the cardia. Marie Angelique Pelée, 32 years old, a labouring girl, menstruation usually slight, poor and unhealthy, hard worked, badly nourished, sometimes fasting till three o'clock in the afternoon, and then eating gluttonously; subject, in consequence, to indigestion, and often complaining of the stomach; was very well the 16th April, 1842, which she passed in working at an inhabitant's of the town. It was fast day; and she only got at her dinner beans and confection of grapes, which she eat with repugnance. In the evening she was seized with a violent pain in the stomach occurring suddenly, with a sense of distention of that organ, extreme impediment to respiration, and violent efforts at vomiting, without throwing up any thing. All the night passed in this state. She was made to take infusions of linden and of tea; but these drinks, as soon as taken, were immediately rejected unaltered; and, in the words of the patient, they did not penetrate into the stomach.

On Sunday, this girl suffering more, and believing herself poisoned, sent for me at ten o'clock in the morning. I found her in a great state of agitation, complaining of a violent pain in the stomach, with heat and tension of that organ, and saying that she was suffocating: the extremities were cold, the face violet, as if shrunk, the tongue natural, pulse small and hard. Tartar emetic was given, but was instantly gulphed up, without having reached the stomach, and without acting on this organ. Some hardened fæces were brought away by injection.

In the evening, not having been able to induce vomiting, and as the symptoms persisted and augmented in intensity, especially when the patient was lying down, I looked upon it as a case of *gastro-enteralgia*. I ordered an opiate potion, &c.

In the night of Sunday and on Monday the same agitation, the same sufferings, impossibility of remaining in the recumbent posture, and of keeping down what she drank. Icy coldness of the surface, violet skin, internal heat intense.

On Monday, 18th, early, same state of suffering as on yesterday; the belly was distended and tympanitic; no stools since yesterday,

tongue pale and cold, the pulse very small, occasional eructations. At eleven o'clock the patient, not being able to support her pains, left her bed, wishing, she said, to open her belly; then she came like a madwoman to me, praying for help. I was not able to go till a long time after; they told me then that all of a sudden her belly had greatly augmented in size, and that afterwards there was more calm.

The idea of a perforation of the stomach then struck me. I felt the abdomen, which was in fact very much distended, and full of gas. The patient had several times expressed a wish to make water, and could not. Drinks in small quantity were retained better. Angélique was calmer, but the belly continued to swell, the pulse to sink, the skin became covered with a cold icy sweat. At five o'clock in the evening life became extinct, forty-two hours after the first symptoms.

*Post Mortem Examination.*—The abdomen, enormously distended, made a considerable protuberance. In dividing the integuments we traversed a thick layer of fat, which indicated previous perfect nutrition. When the scalpel penetrated the peritoneal cavity, gases escaped with a hissing noise, the parietes fell, and the belly regained its ordinary size. We then perceived a considerable effusion of a blackish liquid, containing pellicles of beans, exhaling an acid odour, and bathing the small intestines. The stomach, though flattened, was yet voluminous. In raising it cautiously a round opening was perceived (environ trois centimetres en diameter) at the lesser curvature near the cardia. It was slightly marbled of a brown colour on the surface; on the inside it contained a quantity of an acrid and blackish fluid, like that effused into the abdomen, and like it contained floating in it, skins of beans; the mucous membrane from reddish brown to a blackish brown, more remarkable nearer to the perforation. This, a little funnel-shaped on the side of the mucous membrane, was round, and did not equally engage the different membranous layers of the stomach. Thus the mucous membrane, much larger and more widely opened, presented on many points a sort of fissure. In its neighbourhood there was emphysema, and the organ had the appearance of having been violently contused. The other organs in the abdomen presented nothing particular.

M. Lefèvre conceives that this disease is caused by a sudden ingestion of a large quantity of indigestible materials, particularly fruit or vegetables, which remain long in the stomach, till fermentation ensues with the evolution of a large quantity of gas; the stomach is thus over-distended, and becomes paralyzed, and unable to pass on its contents, or to expel them by vomiting. The further continuance of the acrid mass in the stomach softens the organ, thus preparing it to yield to the distending force of the gas, rupture ensues, part of the materials contained in the stomach are expelled into the cavity of the abdomen through the opening, but not all, as the stomach is so paralyzed as to be unable to expel all its contents, so that a considerable quantity is always found in the stomach after death, which inevitably ensues. After the perforation, of course, the efforts of art would be

useless; but M. Lefèvre suggests the utility, in the first stage, of emptying the stomach by means of the stomach-pump, as emetics are powerless. As yet the suggestion is merely theoretical, as he has not yet had a case to try it on, since its possible utility struck his mind. It is certainly a very ingenious one, and the whole paper does the author great credit.

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*On a new Remedy for Scalds and Burns*, by William Rhind, Surgeon, Edinburgh.—In the year 1828, having let fall a drop of melted sealing-wax on the point of the finger, by which it was rendered extremely painful, I plunged it into a solution of gum-arabic, this being the only fluid substance at hand. In a few minutes I was surprised to find that the pain had completely ceased. I allowed this gum to harden on the part, and on washing it off several hours afterwards, I found the cuticle hardened and separated from the cutis, indicating the usual severity of the burn, but there was no blister or effusion of serum, and no pain or injury of the cutis. From this circumstance I resolved to try the farther effects of solution of gum-arabic in burns.

As it is of consequence to have the solution prepared instantly, the powdered gum, if it can be procured, may be in a few minutes dissolved in warm water. If this is not ready prepared, the common gum in small particles roughly pounded, will very soon dissolve, and the application in any case may be applied at a temperature of 96° or 100°, although in general it is more soothing when applied colder. Rancid gum solution should not be used, as it in this state has lost its adhesive quality. Two, three, or four applications may be necessary at intervals of five or ten minutes. The skin should be previously freed of all oily matters, and the first coating, in order that it may be insinuated closely into the furrowed surfaces of the skin, should be rather thinner than the subsequent ones. In order to produce the proper effect it should form a varnished coat of some thickness and closeness over the whole space of the burned part.

With regard to the *modus operandi* of this substance, I am as much in the dark as we usually are with the mode of action of most other well known remedies. I am unable to say whether it has a specific action, or whether it allays the inflammable irritation of the skin, by effectually excluding the external air, and by its being a bad conductor of heat. The first proposition might be so far tested, by trying if other gums and mucilages, or isinglass, for example, produced a similar effect. This I have not tried.

From some experiments, which, however, were never completed, that I instituted some years ago, regarding the influence of oxygen on inflamed tissues and vessels, I am inclined to think that the exclusion of atmospheric air influences very much inflammatory action, and in this way, perhaps, the gum solution checks the inflammation of the skin in burns. Inflammation caused by touching the skin with nitrous acid and other irritants, appears to be suddenly allayed by a solution

of gum-arabic ; erysipelatous spots on the skin seemed also in some trials influenced by this application. And I may here suggest, that it might be tried in the first stages of the pustules of small-pox, especially those of the face, with a view to modify their development, and prevent pitting.—*Edin. Med. and Surg. Journ.*, Oct. 1842.

[Mr. Rhind details several successful cases.]

*Liquor Taraxaci*.—A very elegant preparation has been introduced under the above title, and which, from the strong taste it possesses of the recent root, has been much used by medical men who have confidence in the remedial power of dandelion. The following formula has been communicated to us :

Dandelion roots, perfectly clean, *dried*, and sliced, 18 ounces.

Infuse for twenty-four hours in a sufficient quantity of cold distilled water to cover them.

Press and set aside, that the feculæ may subside ; decant and heat the clear liquor to 180° F., so as to coagulate the albumen ; filter the liquid whilst hot, and evaporate in a drying room, or by means of a current of warm air (a water or steam bath will not succeed so well), until the product shall weigh 14 ounces. To this must be added 4 ounces of rectified spirit. Should the roots not have been perfectly cleansed, the product must be digested with pure animal charcoal. If properly prepared, *Liquor Taraxaci* resembles in colour pale Sherry, and possesses the acrid taste of the fresh root in an eminent degree. The dose is from one to three fluid drachms.—*Annals of Chemistry*.

*On acute Ulceration of the Duodenum in Cases of Burns*.—Mr. Curling has discovered the curious fact, that cases of severe burn give rise to an ulcer in the duodenum, and thus frequently lead to a fatal termination. He details eleven cases of this singular affection, which cannot be perused by the pathologist without the greatest interest. The following are the first two cases, with some of Mr. Curling's remarks :

"CASE I.—*Extensive Burn ; Ulceration of the Duodenum ; Fatal Hæmatemesis*.—M. A. Fox, a girl aged 11, was brought to the London Hospital, May 9th, 1841, on account of a severe burn on the chest and both arms, the skin of which was extensively destroyed. She had apparently been going on tolerably well until the 27th instant, when I was summoned to the case in consequence of the occurrence of profuse hæmatemesis. She afterwards repeatedly ejected blood from the mouth, and also passed some by stool, and notwithstanding the remedies employed, expired in fifteen hours after first vomiting blood.

"The body was examined on the following day. The surface was pale and exsanguineous. The heart and lungs were healthy, but nearly devoid of blood. The stomach was sound, and contained a quantity of dark grumous blood. In the duodenum, at the distance

of an inch from the pylorus, there was a circular ulcer about half an inch in diameter, and its edges slightly elevated, which had extended through all the coats of the intestine, the bottom of the ulcer being formed by the glandular substance of the pancreas, which was closely united to the duodenum at that part. The open mouth of a considerable-sized vessel could be distinctly seen at the base of the ulcer, apparently on the surface of the pancreas. There was no further disease of the intestinal canal, but it contained a good deal of dark-coloured blood mixed with the fæces. On subsequently making inquiry of the parents, I could find no reason to suspect the existence of disease in the duodenum previously to the occurrence of the burn.

"CASE II.—*Extensive Burn; Perforating Ulcer of the Duodenum; Death from Hæmorrhage.*—A fine male child, aged 4 years, was admitted into the London Hospital, Sept. 11th, 1840, under the care of Mr. Luke, having sustained an extensive burn on the neck, chest, and both arms. The case was treated in the usual way, but on the 24th, about 11 A.M., after complaining of heat and pain in the abdomen, he vomited about half a pint of blood, and afterwards continued to pass blood by stool at different periods till his death, which occurred on the following day, in the evening, after a convulsive fit. The bowels were not relaxed previously to the hæmorrhage.

"I examined the body the day after death. The surface and internal organs were unusually pale. The heart and lungs were healthy. The stomach was sound, and filled with undigested food mixed with dark-coloured blood. The intestines contained a quantity of black blood, like pitch, mixed with feculent matter and mucus. A large solitary ulcer was found at the posterior part of the duodenum where it passes in front of the head of the pancreas. This ulcer was of an irregular form, and three-quarters of an inch in diameter at its broadest part. It had destroyed the whole of the coats of the gut, so that its base was formed by the pancreas. So slight was the connexion of the margin of the ulcer to this gland, that in disturbing the parts in their removal, the border of the ulcer gave way, and allowed the escape of a portion of the contents of the duodenum into the cavity of the abdomen. The edges of the ulcer were smooth and elevated. A large blood-vessel was distinctly seen running across the base of the ulcer in a transverse direction. The anterior part of the parietes of this vessel was destroyed, so that the remains presented merely a groove or channel, which terminated near the edges of the ulcer, at the opposite sides, in open mouths, into which bristles are introduced in the preparation. The rest of the intestinal canal was carefully examined, but without any further disease being detected. The follicles however throughout were well developed."

"In the preceding observations, the origin of the mischief in the intestine may be traced from the period of the injury to the skin, and referred to acute inflammation, ending in ulceration of a defined portion of the mucous membrane of the duodenum proceeding rapidly to

perforation, exposing the pancreas, and sometimes laying open the branches of the hepatic artery passing between this gland and the intestine, and sometimes opening a communication with the serous cavity of the abdomen, producing peritonitis, and thus causing death. It has been noticed by authors, that in cases of extensive burn, patients often appear to be going on well, the constitution seeming to bear up against its destructive effects, when the powers suddenly give way, and the patient rapidly sinks. In many of these cases, if inquiry had been made, it would very probably have been found that the unfavourable change had resulted from the occurrence of hæmorrhage or perforation from an ulcer in the duodenum. Indeed, in two cases which have come under my notice, the surgeon in attendance was quite unaware of there being any bleeding from the bowels, the nurse having neglected to inform him of the alteration in the appearance of the stools.

“It would be interesting to inquire how it happens that in cases of burn, the first portion of the duodenum is peculiarly the seat of inflammation and ulceration, in preference to other parts of the intestinal tube. It cannot be attributed solely to the congestion of the mucous membrane, which commonly occurs after a severe burn, inasmuch as the remainder of the alimentary canal, though equally participating in the vascular disturbance, very rarely indeed becomes affected with ulceration. May it not be an effect of the sudden arrest of the important functions of a large part of the skin, not only of that actually injured or destroyed by the fire, but also of the parts which usually become afterwards inflamed to some extent around the seat of injury? The duodenum is furnished with peculiar glands, the true glands of Brunner, which abound in that particular part of the intestine, the seat of disease, and though their office and the nature and uses of their secretion have not been well ascertained, their size and number indicate that they must be capable of pouring out a large quantity of fluid, and that their functions in the œconomy are by no means unimportant. Now it is seldom that the secretions of any organ can be suddenly stopped without injurious consequences resulting, and considering the importance of those of the skin, and the continuity of this structure with the mucous surface of the alimentary canal, we can scarcely be surprised that the duodenal glands should sympathize and endeavour, by an increased action, to compensate for the suppression of the exhalation from the skin, and that the irritation consequent thereon should often lead to inflammation and ulceration. The period too at which the disease is set up, commencing as it does so soon after the occurrence of the injury, and, if not fatal, ceasing, as I shall presently show, when the functions of the skin are restored, or a drain is established during the necessary work of repair,—all these circumstances seem to indicate that the origin of the mischief must be referred to some sympathetic cause, such as I have described. And if this supposition should prove correct, the exca-

vated and perforating character of the ulcer\* would be explained by the disease commencing in glands seated beneath the mucous membrane. Since I was led to suspect that the glands of the duodenum were the original seat of diseased action, I have not had sufficient opportunities of investigating this interesting point by dissection, in cases where death has ensued within a few days after the injury."

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*Improved Method of administering Cod Liver Oil.*—Dr. Ure has suggested the adoption of cod livers as a diet for patients who are recommended to take the oil. In order to prevent the loss of oil during the process of cooking, he recommends the livers to be immersed entire in boiling water, to which a sufficient quantity of salt has been added, to raise the boiling point to about 220° Fahr. The sudden application of this high temperature coagulates the albumen of the liver, and prevents the escape of the oil. When the liver is cut the oil exudes, and mashed potato may be used as a vehicle. Dr. Ure informs us, that having been advised to take cod liver oil, he found the nauseous flavour very objectionable, until he contrived the above plan, which he finds to answer extremely well.—*Pharmaceutical Journal*.

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*A Notice of a Case of Poison by Hemlock Fruit taken in Mistake for Anise Fruit*, by Jonathan Pereira, M. D.—The resemblance between the fruits (usually called seeds) of anise (*Pimpinella Anisum*) and hemlock (*Conium maculatum*) is such that the one may be readily mistaken for the other by a superficial observer. A case of poisoning, which has recently occurred in France from an error of this kind, induces me to hope that the following account of the distinctive characters of the two fruits may not be uninteresting to the Members of the Pharmaceutical Society.

The following is a brief sketch of the case referred to:

"A gentleman who had at various times derived benefit from the use of an infusion of anise (prepared with eight grammes or about 123½ troy grains of the fruits and 500 grammes of water) took, on one occasion, his usual medicine without deriving therefrom the accustomed relief. On the contrary, he experienced after its use various alarming symptoms, such as extreme uneasiness, followed by slowness of pulse, coldness of extremities and other complaints, all of which ceased after copious vomiting. The physician, who had been called in, having declared that the symptoms resembled those of poisoning, the remains of all the substances used that day at table were examined, but without any noxious ingredient being detected. A fresh infusion

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\* "I have seen ulcers of this form in the same part of the intestine in other cases besides burns. Some specimens of the kind may be seen in the museum of Guy's Hospital. The peculiar characters of the duodenal ulcer are also well described by Dr. Hodgkin, in his published lectures on the Morbid Anatomy of the Mucous Membranes. For the hint that the glands of Brunner are the probable seat of ulceration in these cases, I am indebted to my friend Mr. Bowman, of King's College."

of anise was prepared and taken; and the same symptoms, but in a more aggravated form, followed its employment. The water, the sugar, and the anise were now carefully examined. In the two first nothing injurious was found, but in the anise some suspicious fruits were detected, which Professor Richard declared to be those of hemlock. They were recognized by the five crenulated ridges which each mericarp or half-fruit presented.

In another place I have adduced the resemblance between the fruits of hemlock and anise as an argument in favour of the identity of our hemlock with the celebrated Athenian state poison, by which Socrates and Phocion were destroyed, and which was called by the Greeks, *κάρνη*, by the Romans, *cicuta*. For Dioscorides declares, that the fruit of *κάρνη* resembles that of anise, but is somewhat paler.

As many persons, unacquainted with botany, are apt to confound fool's parsley (*Æthusa Cynapium*) with hemlock, I shall describe the essential and distinctive characters of the fruit of this plant as well as of hemlock and anise. An accurate botanical description is then given, illustrated with wood-cuts.—*Ibid.*

*Notes on the Tallicoonah or Kundah Oil*, by Mr. Robert Clarke, Senior Assistant Surgeon to the Colony of Sierra Leone.—The tree which furnishes the nuts from which Tallicoonah or Kundah oil is procured, is found growing abundantly in the Timneh country and over the colony. At the village of Kent, near Cape Schilling, the oil is manufactured as follows:—The nuts are dried in the sun, then hung up in wicker racks or hurdles, and exposed to the smoke of the huts; when exposed for a sufficient time the nuts are roasted and subjected to trituration in large wooden mortars until reduced to a pulp. The mass is then boiled, when the supernatant oil is removed by skimming. The natives principally manufacture the oil to afford light; the leaves are used by the Kroomen as a thatch.

I believe the medicinal properties of Tallicoonah or Kundah oil are unknown in Europe. Among the liberated Africans, the Sherbro and Soosoos, the oil is held in high estimation as an anthelmintic, the negroes and all classes of the colonists being very subject to worms. The sort of worms for which Tallicoonah or Kundah oil proves efficacious are the tape, lumbicus, and ascarides, more especially the two former; administered, however, in the form of enemata, the oil is successful in bringing away great numbers of the latter. When employed as an enema, one or two ounces may be thrown into the bowels, dissolved in warm water, of a temperature sufficient to retain it in the liquid state. I have used it in large doses (as much as  $\frac{3}{4}$  iss.) in "Lethargus,"† a disease of the brain in which it is desirable to act on the bowels with the most powerful drastic purgatives. Some of the colonists are in the habit of mixing with the palm and nut oils used to afford light, a portion of Tallicoonah oil, to prevent their servants from using the oil with their food.

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† See London Medical Gazette, Sept. 18, 1840.

I have employed it in cases of worms, or where I suspected their existence, in doses proportionate to the age and strength of the patient. In such cases the dose has ranged from one ounce to one drachm, fluid measure. It is here necessary to observe, that its purgative effects were by no means always uniform. In persons of weak habit of body, and in whom there existed any liability to bowel complaints, the Tallicoona oil, from its acrid bitter properties, would prove injurious; but in persons in the opposite condition of body, I can confidently recommend this medicine as a safe and powerful anthelmintic. The usual way I have administered the oils is precisely similar to the modes in which castor or the other fixed oil are given. If given in proper doses, its purgative effects bear a close resemblance to those of castor oil, both in the length of time that elapses before its operation, and in the bulk of the stools produced. When over doses are taken, it produces the most violent hypercatharsis, cold sweats and vomiting, succeeded by collapse, and if remedial means are not promptly employed, even death. I may observe, that the negroes also use it as an expectorant. The best specimens are liquid, but it is more generally found concrete. The tree grows to the height of forty feet, the nuts being contained in a multilocular capsule. The oil is sold in the colony at two shillings a gallon, and could be procured in abundance from the coast as an article of commerce. I could spare to any of your medical friends, who wish to administer this oil as a remedy, a small quantity. I expect shortly to receive specimens of the root, stem, and leaf, and will forward them on their arrival.

*Remarks on the above Paper, by Dr. Pereira.*—"The 'nuts' described in Mr. Clarke's paper, are the seeds of the *Carapa Touloucouna* of the *Flore de Sénégambie*, a Meliaceous plant, figured in Sweet's British Flower Garden (i. 72), and growing in dry places near Itou, on the shores of the Casamancia. The fruit is a large, somewhat globular, five-celled capsule. The seeds (of which there are from eighteen to thirty in each capsule) vary in size from that of a chestnut to a hen's egg: they are three-cornered, convex on the dorsal surface, of a brownish or blackish red colour, and rugous. Specimens of the seeds, with the fruit, are contained in the Banksian Collection at the British Museum. In the *Flore de Sénégambie*, the expressed oil of the seeds is called *Huile de Touloucouna*, and it is described as being sometimes liquid, sometimes solid according to the variable quantities of oleine and stearine which it contains. A notice of its uses is said to be contained in the *Ann. de la Société Linnéenne de Paris*, for May, 1824, but I have had no opportunity of consulting this work. The oil owes its bitterness to an alkaloid principle, which MM. Petroz and Robinet (*Journal de Pharmacie*, t. vii. p. 48), found also in the bark of the tree."

Mr. Redwood observed that he had made a few experiments to determine some of the most prominent characters of the oil. He found it to be entirely soluble in ether, and that alcohol separated it into two parts, a concrete substance, which was dissolved, and an oily

fluid at ordinary temperatures, on which the alcohol took no effect. The former contained the bitter principle and the nauseous odour of the oil, the latter was nearly colourless and tasteless.—*Ibid.*

*The Solubility of Lead in all Water containing free Carbonic Acid*, by G. R. Morson, Esq., M. D.—I am most anxious to communicate to you, in your Editorial capacity, a chemical discovery, mentioned to me a day or two since, by Professor Daniel of King's College, which he has kindly permitted me so to communicate, and a general knowledge of which is, in my opinion, highly important.

You and most of your readers are well aware, that it is the generally received opinion of chemists, that spring or river water containing salts of lime, &c., will not dissolve lead or its salts, if kept in or transmitted through that metal, although pure distilled water will hold a considerable quantity in solution. Professor Daniel's attention having been directed, in consequence of some severe cases of colic in the neighbourhood of his residence at Norwood, to the examination of the water, found, to his astonishment, that it contained lead in large quantity, and has established the fact, that in all cases of water containing *free carbonic acid*, lead is readily dissolved, and cannot therefore be safely kept in or transmitted through that metal.—*Ibid.*

*Alteration of the Blood in Disease*.—M. Andral commenced last year, and is still pursuing, his admirable researches on the blood. It is impossible for us to do justice to his valuable series of experiments, but we may briefly sum up his conclusions, which strike us as promising to unfold mysteries of great importance in the study and treatment of disease. He has proved that all was not error in the humoral pathology, and that in morbid states of the system the prominent characters of the blood appear to undergo various changes. In the phlegmasiæ he has found an excess of fibrine, also in the latter stages of phthisis. In the pyrexia the fibrine diminishes, the globules increase in number in a ratio corresponding to the degree of depression of the powers of life. Cerebral congestions and hæmorrhages appear to develop the same change; but chlorosis forms another type of diseased blood—the fibrine remaining unaffected, but the globules presenting a marked diminution. The organic qualities of the serum diminish in Bright's disease of the kidneys, as well as in other morbid states, attended by the secretion of albuminous urine; while the salts of the urine, which ought to be separated from the blood, remain in excess in the circulation.

From experiments which have been performed by Messrs. Becquerel and Breschet, on the temperature of arterial and venous blood, they have discovered that the former is invariably higher than the latter; the blood of the left auricle was nearly a degree warmer than that of the right, indicating that an increase of temperature had been acquired by its passage through the lungs.—*Spooner and Smart's Retrospect of Medicine and Surgery.*

*Auscultation in Diseases of the Stomach.*—We are not aware that auscultation has ever been applied to the investigation of diseases of the stomach; we are induced, however, to think that the stethoscope might be rendered available as a means of diagnosis in certain affections of this organ. This opinion suggested itself during our treatment of a patient, whose case presented the following symptoms; gradual emaciation; darting pains, and tenderness along the sternum; sensation of obstruction of food at the epigastrium; no vomiting; no palpitation, cough, or other symptoms of disease of the heart or arteries. On application of the stethoscope to the part of the stomach, and requesting him to swallow some fluid slowly, *a prolonged gurgling sound was heard a few seconds after the act of deglutition, followed by a pause, and then a repetition of the same sound for a shorter period.* On examination of the stomach after death; *externally* a mass of enlarged absorbent glands were seen within the lesser arch, and its coats felt remarkably thick and indurated from a space extending about half way from the œsophageal to the pyloric extremity, and two inches in breadth. *Internally*, the disease presented the usual character of scirrhus vegetation, with an ulcerated superficial excavation near the œsophageal orifice. The introduction of the finger through that opening was slightly opposed by a nodule of the distended structure, which encroaching on the canal, diminished the area of its orifice. It will be observed, that the man's sensations were truly pathognomic of the seat of the disease, and we imagine that the sounds conveyed to our ear were declaratory of the morbid appearances revealed by dissection. It is necessary to acquire an accurate knowledge of the sounds elicited by the passage of food, and particularly fluids, into the stomach, and in various states and positions of the body, before we may assign its due value to auscultation as a mode of diagnosing the diseases of that organ.—*Ibid.*

We are happy in being able to record the following opinion of Messrs. Spooner and Smart, of our fellow-countryman's work:

"On the subject of aneurism, and the diseases of arteries, we cannot refer to a better work than that which Mr. Porter, of Dublin, has published during the past year. Since the work of Mr. Hodgson, we do not think a better summary of this surgical department has issued from the press: and the original matter founded on extensive practical observations, must attract the attention, if it does not carry the conviction of the surgical world."—*Ibid.*

*Fissures of the Anus.*—This very painful affection has been treated by our continental brethren with success, by enemata, containing the extract of rhatany; four scruples are mixed with 8 ozs. of water, and thrown up the rectum once or twice a day. In the course of a few days the pain, which is very acute during the passage of an evacuation, entirely ceases, and the crack heals. M. Bretonneau first suggested this remedy, which has been employed also by M. Trousseau, and others.—*Ibid.*

*Dalby's Carminative.*—℞. Tr. Opii. 3j. ; Tr. Assafoet. 3iiss. ; Olei Carui. 3j. ; Olei Menth. Pip. 3ij. ; Tr. Castorei, 3viss. ; Sp. Rectif. 3vj. M. S. A.—When the mixture is complete, it is to be divided into two-drachm doses, which are to be poured into small bottles, containing from seven and a half to ten drachms a piece, into each of which a drachm of calcined magnesia has been previously introduced. Finally, the bottles are to be filled up with simple syrup, and a small quantity of rectified spirits, and to be well shaken, to mix the whole.

This medicine is one of the most ancient and popular arcana in Great Britain, where it is recommended in the flatulence, gripes, convulsions, &c., of infants ; and in the irregular gout, the bloody flux, and violent colic of adults. It is thought eminently serviceable in the different bowel complaints to which sea-faring men are very subject.

Five or six drops are given to weakly infants two or three days old, in a tea-spoonful of warm water sweetened ; and if this dose does not produce the desired effect in six or eight minutes, it is repeated. The dose is augmented in proportion to the age of the little patients, and the severity of the symptoms to be combated. Two doses in a day, or three at the most, are sufficient for the most obstinate cases.

A tea-spoonful is given to infants from one to two years old, or even more, if the symptoms are violent. Three tea-spoonfuls are given to children seven years old.

Adults take half or two-thirds of a bottle for a dose, either pure, or mixed with as much warm water as will make it of an agreeable temperature. In all cases it is necessary to shake the bottle before pouring out the dose.

It has been observed, that in persons subject to constipation, or who often vomit acid matter, it is very useful to combine magnesia with the use of this carminative.—*Journal de Chimie Medicale*, Sept. 1842.

[Like other popular nostrums, Dalby's Carminative is made after various receipts, so that the dose, which is perfectly safe when the cordial is prepared by A., may be poisonous when it is manufactured by B. In the Returns from the Coroners of England and Wales, made to the House of Commons in 1839, we find ten cases of death from Godfrey's Cordial, and one from Infant's Mixture. Dr. John Clarke mentions an infant destroyed by forty drops of Dalby's Carminative.—*Translator's Note*].—*Medical Gazette*.

*Means of rendering the Preservation and Use of the Nitrate of Silver more certain and more easy, by Professor Dumeril.*—The little cylinders of lunar caustic are generally kept in shops, in a bottle well corked, and separated from each other by linseed, or coriander seeds, to preserve them from the action of the light, air, and moisture. As these cylinders of melted nitrate of silver have not been always moulded at the same degree of fusion, when too much

acid has remained in the material, it crystallizes in the mould, by radiating striæ, and unfortunately the cylinders are then friable, very brittle, and necessarily difficult to fix between the sides of a porte crayon. They must be cut in order to introduce them into the metallic tube, and in doing this they are often broken, and if they are too thin, they break on the least effort. In all cases it is not easy to cut or scrape them, to adapt them to the surfaces on which we wish the caustic to act, whether it be on a single point, or on a line; a flat surface, or the whole extent of a large ulcer. By the little improvement I am about to suggest, I obtain all these advantages. It consists in melting at the fire, or dissolving in pure alcohol, good sealing wax used by engravers, which contains a good deal of gum lac; holding in a forceps the cylinder of nitrate of silver, I dip it in this solution. The material of the lac applies itself perfectly round the nitrate of silver, and covers it entirely; it adheres to it on all sides, and very strongly; as a varnish unalterable by the air, and whose surface is very smooth, and impenetrable to moisture.

The nitrate of silver, so prepared, can be touched with impunity; it does not stain the fingers; it is very strong, in consequence of its envelope. It resists the pressure of the porte-crayon, which it no longer corrodes. By scraping off some of the covering, as much of the surface of the caustic may be exposed as is thought necessary.

The great advantage in this mode of preparation is, that I can fix the caustic with firmness, and carry or insinuate it without danger, to any sufficient distance down the throat, or the other cavities.—*Gazette Medicale*.

*Préservation of Dead Bodies*.—M. Cornay read a memoir on *Galvanoplasty*, applied to the preservation of bodies previously embalmed; and he showed the body of an infant, that he had by this means covered with a layer of copper.

M. Gannal presented two rams' heads, prepared by his proceeding. The first injected, represented in the most perfect manner the features of the animal; the second had been covered by a layer of copper, according to M. Soyer's plan.—*Gazette Medicale*.

*Memoir on Ramollissement of the Brain*, by Dr. Durand-Fardel.—The following are the conclusions drawn from a large number of facts:

1st. Ramollissement of the brain is always developed at the end of a sanguineous congestion, and is accompanied by redness in its acute stage, save in some infinitely rare exceptions.

2nd. When it has passed into the chronic stage, this redness disappears, and usually gives place to a yellow colour, a trace of the blood infiltrated in the beginning, and especially common and well marked in the cortical substance.

3rd. Chronic ramollissement is first announced by a simple diminution of the pulpy consistence, without redness.

4th. Later, it takes, in the cortical substance of the circumvolutions, the form of membraniform layers, yellow, soft, *yellow plates of the circumvolutions*.

5th. At the same time the nervous and liquefied pulp is transformed into a liquid, turbid, grumous, like lime and water infiltrated in the intervals of the cellular fibres; *cellular infiltration*.

6th. At a still more advanced period, the parts, thus softened and transformed, disappear, and there result either ulcerations at the surface of the brain, or circumscribed cavities, or vast losses of substance.

7th. The ramollissement appears susceptible of stopping indefinitely at each of the periods of its chronic stage; it thus undergoes a sort of cure analogous to that of a hæmorrhagic depot.—*Gazette Medicale*.

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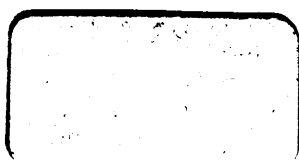
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